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A CLINICAL LECTURE
ON
TUBERCULAR MENINGITIS.

Delivered at the Woman's Medical College, Chicago, Ill.

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(Reported by WILLIAM WHITFORD.)

The subject for this morning's consideration is tubercular meningitis; basilar meningitis; acute hydrocephalus; an inflammation of the membranes of the brain that has its origin in the deposition of miliary tubercles. These miliary tubercular deposits occur mainly in the blood-vessels of the pia mater. It is an uncommon thing for the dura mater to be involved in this process. They form in the perivascular spaces and in the walls of the blood-vessels; they occur by preference in the area of distribution of the Sylvian artery.

These miliary tubercles depositing themselves in the walls, contracting the cerebral blood-vessels, filling up the perivascular spaces, blocking the blood current, give rise to thrombosis, softening of the vessel, and to extravasation of blood. They also occur in other vessels at the base of the brain. These miliary tubercles are the source of irritation; they obstruct the blood current in the way we have indicated, and give rise to inflammation of the cerebral membranes with subsequent exudations, and to an immense outpouring of serum into the ventricles, so that we have three stages in the pathological history, and as we shall subsequently see, these three stages give rise to three stages in the clinical history of the disease. We have first the deposition of tubercles, producing irritation, interfering with the blood supply. Then, later on, as the miliary tubercles increase, and the circulation becomes more and more interfered with, an inflammatory exudation begins to take place, giving rise to the clinical history characteristic of the second stage of the disease. The outpouring of serous effusions into the ventricles of the brain gives rise to the symptoms characteristic of the third stage of the disease.

Its clinical history is, first the period of invasion, the time when the child begins to be sick from the deposition of miliary tubercular deposits—deposits which are exceedingly small—sometimes so small as not to be recognized by the naked eye. A miliary tubercle is about the size of a millet seed, but by a process of aggregation they may become large masses.

A child so troubled begins to be emaciated—emaciation especially marked about the lower extremities. Children with this disease are usually very bright. There is in connection with this miliary tuberculous condition a precocity. For instance, you take the ordinary form of tuberculosis—phthisis pulmonalis—people so afflicted are often above the average in mental capacity. Indeed, some of the most brilliant people the world has ever produced have been, and are, patients with this tubercular diathesis. So in this disease, with such tuberculous inheritance, children are precocious, bright, smart, beyond their years. They begin to be fretful, irritable, peevish, and complaining; nothing satisfies them. While at play, a child so afflicted, will suddenly stop, and clasping its hands to its head will cry out with pain. The appetite fails; the tongue becomes a little coated, and sometimes a little thickened in appearance; there is a slight, perceptible rise in the evening temperature; a little cough; a loathing and disgust for food; there is a variation of the pulse; sometimes constipation, and sometimes diarrhœa. The prodromic period of irritation lasts a month, or perhaps two months, and these symptoms often pass unnoticed by the parents.

After a time we begin to have symptoms characteristic of the development of tubercular meningitis—the first stage proper. We have as one of its most striking and early symptoms, vomiting. The child vomits without any provocation from food, and this vomiting is of a most peculiar character, and once seen is never to be forgotten. There is no nausea; but an immense outpouring of fluids from the stomach. Sometimes the character of the fluid is that of simple mucus; in a word, there is prodigious, projectile vomiting without any apparent cause from the injestion of foods. This cerebral vomiting unattended by nausea, is an important element in the diagnosis.

The child begins to complain of headache, to show signs of intense pain. It puts its hands to its head and cries out frequently with great pain, and this pain, let me say, is of a most intense, excruciating character. I think there is no pain so intensely acute, severe, and overwhelming as the headache of tubercular meningitis. Associated with it is more or less motor disturbance, and, by the way, we may state here in passing, that the beginning, the progress, and order of symptoms of the disease depend largely

upon the place where the miliary tubercles are first deposited. If they are deposited primarily in the area of the cerebral artery, the motor disturbance at the outset will be quite marked, manifesting itself in the way of spasms, twitchings of the facial muscles, jerkings of the limbs, muscular tremors, etc. Sometimes when the disease commences in this area, and is progressing rapidly, epileptiform convulsions are ushered in. Then, at about this time, certain sensory disturbances manifest themselves; there is general hyperæsthesia; a great intolerance of lights and of sound; the pupil is contracted; the child is intolerant of the least possible effort at movement; walking across the room will give it intense pain. Frequently, we have too, certain psychical symptoms; evidences of mental disturbance. If the deposition of miliary tubercles begins or takes place in the anterior cerebrum, the area of disturbance being there, it has more to do with the intellectual manifestations of the patient, and the psychical symptoms are early and prominent ones. The child becomes more emotional and irritable; a little delirium begins to show itself just as the child is going to sleep or waking up. When it awakens, it does so with an intense cry—a cry so heart-rending and peculiar that it has been called the "hydrocephalic cry."

We find a disturbance in the vaso-motor area of the nervous system. If you take your finger nail and draw it over the thoracic and abdominal areas, especially where the two areas unite, it will speedily be followed by a bright red line that will remain there for, perhaps, several moments—the "tache cerebrale" of Trousseau. While it is not pathognomonic of tubercular meningitis, yet it is rarely found in any other disease of the body that does not involve this inflammatory, irritative condition of the cerebral membranes. It is the beginning of this form of nervous disease. This "tache cerebrale" is found early, and is the result of interference with the activity of the vaso-motor nervous system.

The abdomen at this time presents a peculiar "boat-shaped" appearance, an important point in the diagnosis, from the fact that in other infantile diseases which closely resemble tubercular meningitis, it is usually found tympanitic, distended, but in this disease it is retracted; the umbilicus is thrown well back towards the spinal column, so that it presents what is admirably termed "a boat-shaped appearance."

The temperature of the disease is well worthy your careful consideration. There is from the beginning of the prodromal period a slight rise in temperature, and when the first stage of the disease has become established, the evening temperature will be found to be one or two degrees higher than that of the morning, but it rarely ever rises above 103°, except when the disease is about to terminate fatally. The exacerbations and remissions are irregular; they do not pursue that regular, uniform course which is characteristeric of the disease that closely resembles it, namely, remittent fever. The condition of the pulse is important in the beginning of the disease. It is usually full, compressible, regular. During the stage of irritation, when you have the vomiting, to which I have alluded, and sensory disturbance, the pulse, as a rule, is regular, and not unduly fast, which is another important aid in the differential diagnosis. Respirations are regular, and become more rapid than normal in the early history of the case. During the primary stage, we have another symptom of great value, and that is constipation of a very obstinate character. Ordinary doses of laxatives are entirely inefficient to overcome it.

Now, as the disease progresses, and the exudations begin to appear, a change manifests itself in the symptoms, and in the majority of cases you will flatter yourselves that your treatment has been a success, and that your patient is convalescing. The vomiting ceases; the headache disappears; the muscular spasms and convulsive movements cease to a greater or less extent; the child is no longer intolerant of light and of sound; the contracted pupil begins to become normal in character, and for a few days it would seem the patient was certainly getting better. But very suddenly there comes an increase in the mental hebetude; an increase in all the psychical symptoms. The delirium becomes more marked; the tendency to sleep becomes greater, and the child loses almost altogether its active responses to external impressions; it becomes, in a word, dull, heavy, soporous. Along with this condition, we have alterations in temperature. The characteristic remissions of the first stage disappear; the temperature, as a rule, falls below normal, the fever disappears, the pulse becomes slow and irregular, respirations become irregular, and we have that respiration characteristic of pressure made npon the medulla, the so-called "Cheyne-Stokes respiration," which consists in a respiratory manifestation by a series of cadences. The respiration will be normal in one or two movements, and then the depth of the movements will seem to increase, and the interval between the respiratory connections increases until the respirations gradually fade away, and for several seconds cease, after which they again become more manifest. The interval will be shortened in its duration, the respiratory action will be increased until they again become normal, following which is a retrocession, until the respiratory action ceases, and so the respiratory phenomena continue. The peculiar character of the respirations will, as a rule, manifest itself at night. During the whole day the respirations will, perhaps, be normal, but as night approaches this peculiar, medullary respiratory action, characteristic of pressure made upon the medulla, and named after the two distinguished pathologists, Cheyne and Stokes, comes on. Exudation has been going on, the effusion of serum has increased, and we gradually begin to get more pressure upon the important structures at the base of the brain, and as a consequence we have a very great increase in the comatose condition. It becomes now almost impossible to arouse the child, and along with this increased coma there occurs a very remarkable change in the pulse. The pulse, which had been normal, now becomes exceedingly frequent, reaching from 150 to 170 beats in a minute, and associated with this great rapidity of the pulse is more or less irregularity; the beats are not

of the same intensity. During this stage of the disease the spasms that characterize the motor disturbance at the outset develop into paralysis. You will find one side of the face, or some member of the body, such as an arm, or a leg, or both, paralyzed. Just before death ensues, as a rule, we have decided elevation of temperature, the temperature frequently running to 105°, and paralysis before the scene closes becomes generally diffused.

Now, as to certain points in the diagnosis of this disease. It is liable to be mistaken for ordinary acute meningitis, for gastro-enteritis, for infantile remittent fever, for acute Bright's disease. We told you at the beginning of the lecture that tubercular meningitis was basilar; that the base of the brain was involved in the pathological processes. It is a most uncommon thing to find any of these miliary tubercles elsewhere in the brain. The convexity of the brain escapes, except in so far as it becomes involved later along from pressure of serous and purulent exudations.

A surface thermometer will aid you in diagnosis. There is a certain fixed relation, in a state of health, between the temperature of different parts of the head, as rudely shown in this hastily prepared diagram. Taking the left side of the brain, we have here (illustrating) three areas designated, the frontal, the parietal, and occipital, corresponding to the three divisions of the surface of the cerebrum. The temperatures shown in the diagram are determined by examination of different classes of people in Brooklyn and New York, by the distinguished specialist, Dr. Gray. In the temporal region, as you see, the temperature is 94.2°; over the parietal, 94.3°; in the occipital, 92.3°. On the right side the temperatures are generally lower, the right side, of course, having less functional cerebral activity than the left. The frontal temperatures are lower than those of the occipital in tubercular meningitis. The relation is disturbed. The occipital area is where the disease spends its force largely. The relations of the areas

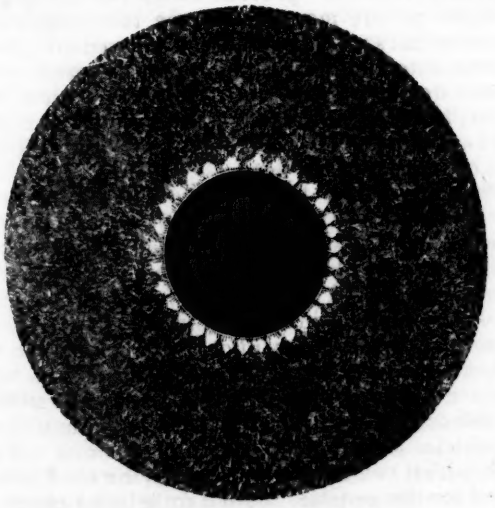

Diagram 1. Wreath of white clouds.

then are disturbed, and this, associated with the other symptoms enumerated, will serve to make the diagnosis clear. We have also, in the first stage of the disease, a contracted, mobile pupil. In the second stage the pupil dilates a little, is immobile and insensible, so far as contact with light is concerned. There is not only dilatation of the pupil, but certain important changes take place around the pupillary margin. About the sixteenth of an inch or less from the margin proper there begins to form a distinct wreath of white clouds (see diagram 1), doubtless due—as has been determined by Dr. John D. Skeer, of this city, who was the first physician to discover this pathognomonic symptom—to changes in the iris and the deposition of minute, miliary tubercles upon the vessels. Now this is to be seen only in the incipient stage of the disease, and when you have associated with the symptoms we have described, this characteristic condition of the iris, you are absolutely certain of your diagnosis of tubercular meningitis. Unfortunately, this symptom is not always present, just as other classical symptoms are sometimes absent in other diseases. If this condition of cloudiness around the pupillary margin happens to be present, after three or four days it begins to disappear. Instead of minute, cloud-like masses, we have a yellowish-brown circle (see diagram 2), this change taking

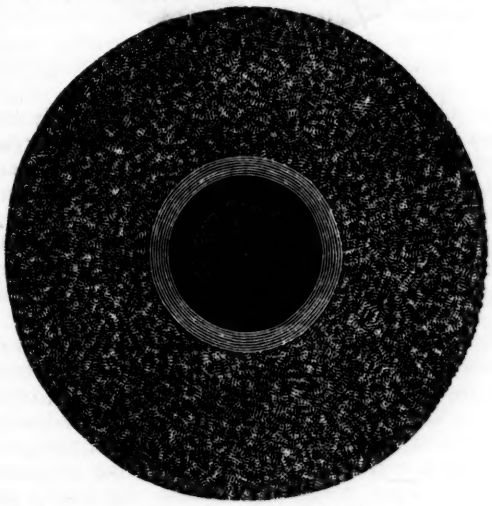

Diagram 2. Yellowish-brown circle.

place at the beginning of the second stage, due, doubtless, to degeneration of the blood-vessels and tissues as a consequence of the presence of miliary tubercular deposits. In the third stage this yellowish brown circle becomes very much attenuated by the dilatation (see diagram 3) of the pupil. There seems to be, in addition to the miliary tubercular deposit, a destruction of the circular muscular fibres of the iris; the pupil ceases to be responsive to light; it becomes immovable. Then, too, the ophthalmoscope is a very valuable aid in the diagnosis during the primary stage of the disease. If you examine the vessels of the retina with an ophthalmoscope you will find venous stasis of the blood-vessels; they appear tortuous and enlarged; you will find miliary tubercular deposits in the choroid, and later along, in conse-

quence of the progress of the inflammatory changes existing there, you will have a neuro-retinitis.

Another point in the differential diagnosis, apart from the signs we have mentioned, is the slow, insidious onset of the disease. Acute meningitis develops slowly, but tubercular meningitis comes on in a slow, insidious way, the prodromal stage requiring, as a rule, a week or ten days; sometimes even a longer

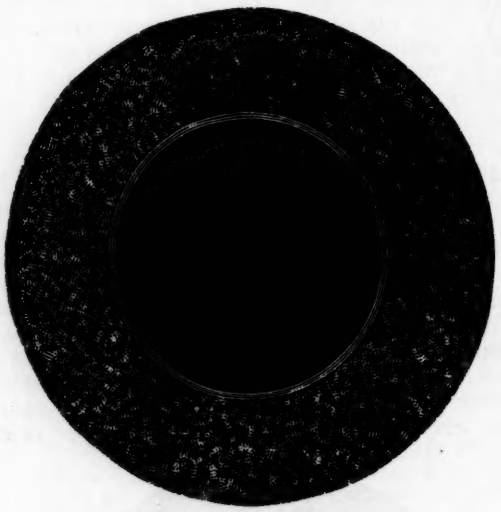

Diagram 3. Pupil dilated.

period than this. Tubercular meningitis rarely ever occurs before the age of 2 years, and rarely occurs after the age of 7. If the child is over 7 or under 2 years, the probabilities are against a tubercular form of the disease.

Its differentiation from gastro-enteritis is made by the boat-shaped appearance of the abdomen, and the presence of the other pathognomonic symptoms here described.

The most perplexing of all diseases, I think, is remittent fever. More mistakes have doubtless been made in the differentiation here than in all the other diseases which it closely resembles. Of course, when we have the head symptoms, the spasms, pain, rise in temperature, etc., together with the pupillary changes, we can easily differentiate the case. But when the three several pathognomonic symptoms are not observed, or observable, then differentiation becomes more difficult. To repeat: the differentiation is to be made mainly by the fact that tubercular meningitis shows a boat-shaped abdomen, and an obstinate constipation. This disease shows a temperature like that of remittent fever, but lacking its regularity. The vomiting in tubercular meningitis differs from that of remittent fever in that it is a vomiting without nausea—indeed, without any evidence whatever of any gastric disturbance; the tongue has little or no fur upon it, whereas the tongue in a case of remittent fever is very foul and thick.

Errors in differentiation of tubercular meningitis from spurious hydrocephalus may arise; but the history of the later disease, in some cases, makes the diagnosis easy. If the child is young, you have in spurious hydrocephalus a depressed fontanelle; in the disease under consideration an elevated fontanelle. In spurious hydrocephalus intracranial pressure is low; in tubercular meningitis it is great, and the condition of the fontanelles will enable you to differentiate it.

The prognosis of the disease is very bad. Occasional recoveries take place, but they are exceedingly few and far between. Yet there are cases on record where post-mortem examinations have revealed the fact that death resulted from other causes than those characteristic of tubercular meningitis, especially in the history of a form of insanity to which your attention will be directed later on, which gives us reason to believe that occasionally the disease is recovered from. Many physicians who see the cases of recovery from tubercular meningitis will tell us that we erred in diagnosis; that it was simple meningitis, and not acute.

The duration of the disease is from 16 to 21 days, except in those cases that are ushered in by convulsions. Then, of course, the duration is very short.

The most important element in the treatment is that which is prophylactic, which takes the child from its birth, knowing its tubercular diathesis, and by judicious, hygienic measures overcomes its tendencies. It involves a treatment for the eradication of the tubercular diathesis; fresh air, sunshine, nutritious food, careful attention being paid to elimination, the use of mild alteratives, etc.

In connection with the tubercular diathesis we must necessarily have an exciting cause or causes, and among some of them are the ordinary febrile diseases of children—the exanthemata, for instance—especially measles, which is a fruitful, exciting cause. Children with a tubercular inheritance should be carefully guarded against such affections as ordinary whooping cough, otorrhœa, etc., which are very common among children, and if any one of these diseases should occur, it should be vigorously treated. There is, unfortunately, a notion among the laity, especially the more ignorant class, that discharges from the ear are more wholesome than otherwise, and sometimes such a condition is allowed to go on without attention being paid towards early and prompt treatment. Children should be guarded also against injuries of the head. The majority of cases that have come under our notice have been the results of injuries of the head.

When the disease has once become established, the treatment to day that is regarded by those who have had the largest experience as the most scientific and likely to give better results than anything heretofore proposed, or brought before the profession, and holds out the most encouragement—and it is not worth our while to mention the numerous lines of treatment that have proved inefficient—is the treatment by inunctions of iodoform—iodoform and lanoline or vaseline, about 1 part of iodoform to 5 of the vehicle. Make an application of iodoform inunctions at least twice daily to the scalp, the head being shaved for the purpose, and the scalp being covered with an impermeable cap. We have seen enough of this comparatively modern treatment to know of its

practical value. We have a case now under observation recovering from its use, and know of two or three cases of the fatal form in which life was prolonged very much beyond the ordinary limit by its application. It is the impression now that if the iodoform inunction treatment is used early in tubercular meningitis, the proportion of recoveries will be much larger. To allay the intense motor and sensory disturbances, opium is indicated, and the bromide of potassium. To relieve the congestion of the blood vessels of the head, elimination by the bowels is indicated, and laxatives, diuretics, etc., may be given.

ORIGINAL ARTICLES.

STATE REGULATION OF THE PRACTICE OF MEDICINE—ITS VALUE AND IMPORTANCE.

Read in the Section on State Medicine, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY H. C. MARKHAM, M.D.,
OF INDEPENDENCE, IOWA.

Experience has demonstrated that genuine scientific culture is everywhere productive of a cast of mind averse to abrupt innovation or the acceptance of an unproven principle or theory. This characteristic as existing in the body of the medical profession, has in the past operated adversely to the acceptance of a belief in the principle or practical wisdom of a legal or State regulation of medical practice in any form. While by no means an experiment or a new political expedient—as its potent success abroad fully proves—it receives the aspects referred to when applied to States having the peculiarities of social and political systems possessed by those whose citizens we are.

Irregular and criminal practice has so intrenched itself, and become so closely interwoven in our social fabric, that only the most judicious and united effort, presents any hope for the erection of a legal barrier adequate to the accomplishment of its object, which latter is the protection of the public.

The aggregation and concentration of population is productive of danger to life and health, the removal of which is the unquestioned duty of the State. To those familiar with the subject it is scarcely necessary to state that the history in various of our States of attempts to secure legislation for the regulation of the practice of medicine, presents little other than a long panorama of heroic endeavor and humiliating defeat. For several years a small number of philanthropists from the ranks of scientific medicine have maintained the unequal contest with the hosts of ignorance and charlatanism—while the main body of their professional brethren have with folded arms, and frequently with open criticism, declined to render the assistance upon which success depended. The chief obstacle obstructing a proper view of their duty, and more especially that of the public at large, is, in its influence, a most serious misconception of the actual object of the legislation in question. Even at the present time it is no uncommon thing to hear from the lips of members of the profession who, in ability and usefulness, are high in rank, the remark that it is only a question of "the survival of the fittest"—that "scientific medicine deserves disgrace and defeat if unable to stand against quackery." This terse expression of the belief of our brethren betrays the inexplicable erroneousness of their idea of the absolute purpose of this legislation. That its object is the furtherance of class and even of school interests, is a misconception of the animus of the champions of this legislation which its opponents have discovered to be their most powerful weapon.

That medical men, by virtue of their calling, are alone competent to measure the evils against which this legislation is aimed, should be its chief promoters, is but commendatory, rather than aspersive, as is alleged, of their championship. The conditions of modern life necessitate the expansion and broadening of the historic self-sacrificing exercise of charity by medicine toward the individual sufficient to include the public. Rightfully or not the latter holds the regular profession responsible for its security against imposition and fraud. State regulation of practice implies the responsibility of the former to institute the method best suited to secure its success. The best light available directs us to that system which invests a Commission or Board to examine, decide, and grant or refuse, as the applicants fitness may determine, a permit to practice. Upon the fitness of the material composing a Board of the kind, much but not all depends. The inadequacy of result may, and will rest in the imperfection of the law under which they act should such imperfection exist. So strongly intrenched is medical error that it can be overcome only by gradual approaches. The danger of failure is lack of patience and caution. All depends upon securing the first advantages. So salutary are the effects of this legislation that public approval attests, but will always await their display.

That guilt makes cowards of medical pretenders found ample verification in the exodus of hordes of this ilk to adjacent States upon the adoption by the State of Illinois of its present medical practice act. Iowa has more recently enjoyed a similar experience. As by a miracle towns awoke to find themselves wholly destitute of medical talent. No better endorsement of the law is possible than the resignation exhibited by citizens under such affliction upon being apprised of *the cause*. Uniformity of the standard of qualification adopted by the licensing power of the different States, should enable the certificate of any one to be honored by all. A central or interstate commission, chosen by the President, equally from the army and civil ranks of practice will be ultimately required. No more is a department of justice than of medicine demanded in our State and National governments.

To this end the one and all essential prerequisite is the united, earnest and cordial effort of the profession in the various States. The momentum

given by the movement of one should not be lost by the inaction of others. The path is thorny and those we labor to rescue too often chill us by that most cruel of wounds, the impugnment of motive, and so slow must our progress prove that only those coming after shall enter the promised land of a redeemed practice. Experience has conclusively shown that at the present time public opinion in some of the States will not permit the suppression of a class of practitioners who, unqualified in various respects, have for a considerable period of time succeeded in concealing the fact from the public. This is more than compensated for in the fact that no difficulty is met in rigorously excluding from State limits all foreign incompetents, and as recently stated by the efficient Secretary of the Iowa Board of State Medical Examiners, who says: "we have put up the bars most effectually, and if nothing more were gained could afford to wait upon the gradual clearing by what might be termed precipitation by death of the somewhat turbid mixture which is now legally recognized as medical practice."

The Christian and moralist outside the medical ranks have yet to be convinced of the vital importance of this legislation to the purity and welfare of our social fabric. Everywhere the success of crime is promoted by insidious and concealed attack. So with fœticide and infanticide, and no prophetic vision is needed, especially by those of our calling, to see the effect upon the home and family of these at present unchecked crimes. Beneath the fair white folds of the emblems of the healing art the black flag of the abortionist has always found an easy concealment. To strip the mask from off these interlopers and drive them from the field is required the aid of legislation moulded by those whose knowledge of the situation equips them for the task. The numerical decline of the typical and peerless American family, finds fortunate compensation in the rapid increase of the average duration of the life of its members, and a brilliant triumph of our brethren, with others, in the field of sanitary science, and significant in this connection as having been largely accomplished by their wise invocation of efficient *legislation.*

Sanitary science, properly a branch of the healing art, at the present is the vine, medical apathy making itself the branch. The same *lusus naturæ* occurs in several States where our pharmaceutical branch has become not only the vine but the husbandman, having even an alleged disposition to set us down as cumberers of their ground. Through the influence insured by and resulting from compact organization, it is made the dictum of their law that a drug upon the shelf is more dangerous to the public than it is when occupying the interior of the victim of ignorant administration. For saith the law: Thou shalt not sell, but *all* may administer. The term "all" includes, when thus emphasized, our pharmaceutical friends, who appear unsatisfied with the glory resulting from an alliance with that army of conquerors of death and disease whose patented weapons, in glittering array, ornament the shelves of our "legally registered friends." Identity of interest, as that of medicine and pharmacy, admits of legislation in common, and of such only. Where the organization of each is adequate it would be wise, by delegated committees, to seek a plan for the restoration of the old-time unity of relationship the lack of which, as shown by recent experience, is most detrimental to both. States having as yet no proper medical practice or pharmacy law will, by adopting primarily an offensive and defensive alliance of the two callings, thus uniting their strength and interests, secure escape from many obstacles that otherwise would present themselves.

The success of the new "Practice Act" of Iowa fully equals the anticipations of its promotors, and has in numerous cases secured the approval of those previously doubtful of its wisdom. Before fully operative it induced numbers of those who in public esteem were as deeply rooted in practice as they were towering above other earthly beings, to accept urgent proposals to locate elsewhere. Many others determined to remove the rust of years from the once dazzling surface of their collegiate armor, but invariably selected for such polishing one of the colleges duly accredited by the Examining Board of the State of Iowa. It will be noted here, in passing, that this law necessarily establishes the much-desired scientific standard of medical institutions of learning. It will also lengthen the list of matriculants of meritorious schools and aid in the extinction of the crop of incorporated blotches whose nefarious avocation has made the exhibition or possession of a medical diploma little other, in the eyes of the public at least, than a cheap confidence trick. The number of medical pretenders driven from the State of Iowa since the adoption of the Practice Act, scarcely one year since, cannot, of course, be accurately ascertained—suffice it to state that it is satisfactorily large. The law is, in the nature of things, far from being perfect.

The objectionable but indispensable feature by which a term of practice in one locality entitles such practitioner to a legal status, is less an objection than its *prima facie* appearance indicates. The records of the Iowa Board show that four-fifths of this class of licentiates are certified to as reputable citizens—such being one of the conditions in the application to said Board—by members of the State Medical Society of Iowa. It is also true that prominent and efficient members of the same Society are of the class to which objection is taken. Some of these found themselves able to take but two out of three contemplated courses of lectures. Others were ill at date of college graduation, and thus were minus the degree which, until the present, was dispensed with at little inconvenience.

It is a consideration of practical importance that every licentiate of this class becomes, by virtue of such benefit, a recruit for the further prosecution of the legal extermination of pretenders in medicine. It is found that the first step for the protection of the public against fraud and crime in medical guise is attended by a loud clamor for various school representation upon committees or boards created by the proposed legislation. Recognition of such claims or men is not their endorsement. There can be no true elevation of error, and the history of all successful phil-

anthropic and political methods for the extinction of giant and deep-rooted evils has this one feature of their inception stage, a feature often termed compromise, but which with more truth may be called "rational concession." Those whose duty is the framing or amending the terms of practice legislation can well afford to consider the problem of the execution of the terms of such legislation, when once enacted. Law is never self-enforcing, and but few of us relish the task of the informer and complainant, wherein our own interests play no part other than of the average citizen. It is this rock upon which some of the most dearly purchased and essential systems of legislation have foundered. A violator of the law or medical swindler might be treated in one respect as a nuisance whose existence, as that of an infectious disease or death-exhaling pool, needs only to be made known to the usual health officer of the district, town or city.

As a matter of economy to the State, not to mention that of necessity, the functions of Health and Practice State Boards should be combined. As a material portion of the machinery of a health department is the appointment in every township of a health official, it should be a provision of the practice act that such health officer should, upon being notified, institute proceedings for the arrest and punishment of violators of the law. Finally, whatever little of practical value may characterize the foregoing, it will have realized its purpose if any impetus or increased interest is added to this our new crusade for the expulsion from the sacred precincts of our several States of the vandal desecrators who, in the guise of true disciples of the healing art, would imperil and ruin home, health, and the happiness of our people and—not the least of all—craftily degrade in public esteem the fair fabric of medicine, over whose vestibule are the words: honor, science.

A CASE OF RUPTURE OF THE INTERNAL CAROTID ARTERY WITHIN THE CAVERNOUS SINUS.

Pulsating Exophthalmus; Ligation of the Internal Carotid Artery. Death. Autopsy.

Read in the Section on Ophthalmology and Otology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY CORNELIUS WILLIAMS, M.D.,

OF ST. PAUL, MINN.

This case is one of exceeding interest, not only because of its rarity but because of its intrinsic importance and gravity. The disease is so rare that in the combined experience of a dozen surgeons of a very large practice it might not be met with once; yet when it does occur it is highly important that it should be recognized and properly treated.

The distinguished author of the article on "Pulsating Exophthalmus" in Gräfe and Sämisch's "Handbook," H. Sattler, was only able to collect 106 cases in the literature of the world for a period of more than 70 years. In the table that he constructed a number of cases are included in which the probabilities are that some other lesion was the disturbing factor, but in the majority of cases he has demonstrated that rupture of the internal carotid within the cavernous sinus was the foundation and origin of the exophthalmus.

In a certain percentage of cases the disease was practically allowed to take its course and resulted in death. This termination, it may be assumed, is the natural outcome of rupture of the internal carotid in this location, when things are left to themselves; or, what is the same thing, when any other treatment save the most radical is adopted. The conditions that govern the result of all surgical operations are, of course, in operation here, and the best directed efforts of the surgeon may fail, as was the case here, through no fault of the surgeon himself.

On February 8, 1887, Dr. J. A. DuBois, of Sauk Center, Minn., sent James Homm, æt. 27, to me for treatment. The patient was a man of large frame, good muscular development, had never had any venereal disease, had always been in good health, but by his own confession and from the statement of the physician, he has been a very hard drinker. About Christmas time he was awakened one night by a fit of violent vomiting and retching, which continued almost without interruption from 11 o'clock at night to 2 P M. the next day. The retching was so violent that it seemed to the patient that every minute must be his last. Very soon afterwards he became conscious of intense pain in the left side of his head and ear, together with a whizzing, whirring noise which was so loud that it seemed strange to him that others did not hear it too. The patient, who lived on a farm near Sauk Center, was not seen by any medical man at the beginning of the attack, and when, after some days, he was seen by Dr. McMasters, of Sauk Center, the left eye was protruding, with the lid discolored. The man was drinking heavily, and so continued until I saw him.

February 8, 1887. Left eye markedly prominent, lids puffy and blue, the episcleral vessels enlarged and full, chemosis of conjunctiva, pupil dilated, media clear. Retinal veins enlarged and tortuous, neuroretinitis, no hæmorrhages.

V. $\frac{20}{30}$, Em. Right eye, V. $\frac{20}{20}$, Em. Auscultation of the eyeball and side of the head disclosed a loud bruit, continuous, with an accession that was synchronous with the first sound of the heart. The bruit was heard not only over the left side everywhere with great distinctness, but all over the head; with greatest distinctness over the left eye and next over the left temporal region; nothing of interest in the ear. The patient was seen at my request by Dr. Brisbine, Dr. Miller, Dr. Witherle, Dr. Carl Schulin, Dr. Wood, and a number of others, all of whom distinctly heard the bruit and felt the thrill that was appreciable when the ear was held to the temple. All bruit stopped on firm pressure applied over the common carotid. The patient was placed under observation in St. Joseph's Hospital. Some two weeks after his admission there, for the first time I was able to perceive pulsation of the eyeball, which was observed when the eye was examined in profile, and was perceptible tc the touch when the eye was

crowded into its socket, or when the finger was forced into the orbit.

About this time, too, a small oblong tumor, somewhat curved in outline, near the size of the little finger of a child, appeared just below the lower lid and toward the inner angle. This tumor pulsated, was easily compressible, and of bluish color, pulsation was not to be felt by the finger.

Four weeks after the entrance of the patient into the hospital Dr. E. J. Abbott, at my request, ligated the left common carotid, in which he was assisted by Dr. Wm. Davis, Dr. Stamm, Dr. Shimonek and others. The ligation was effected without accident and with no unusual damage to the sheath of the artery. A double ligature of catgut was applied, the artery not cut. The temporal pulse on that side ceased immediately, as did the bruit and the thrill, this cessation was complete and permanent. The external wound was closed with silk sutures, after washing with bichloride of mercury solution, 1 to 2,000.

On the tenth day the wound had entirely closed save a small pocket at the lower angle, where there had been a small collection of healthy pus. No bruit or pulsation had returned. Retinal arteries very small, veins still large, neuro-retinitis the same, vision very poor, pupil dilated, chemosis and congestion less, exophthalmus less marked, less discoloration of the lid. The only general symptom of account was an irregular pulse with some fever at the time the abscess formed. The third day after the operation, small doses of whiskey and digitalis were given and these symptoms soon disappeared. On this day, the tenth, the patient got up, dressed and walked around. It is not known just how long he was up, but the sister in charge was summoned hastily and found the man bleeding furiously from the wound and drenched with blood. She with great presence of mind placed her finger in the wound and stopped the bleeding by pressure. Dr. Abbott and myself were summoned by the house surgeon, when Dr. Abbott, assisted by Dr. Renz and Dr. O'Hage, reopened the wound and tied both ends of the artery, which was found to have ulcerated through between the ligatures. No attempt at the formation of a permanent clot could be ascertained, and the artery presented much the appearance of a piece of white rubber tubing. The religation of the artery was attended by immense difficulty because of the swelling and matting together of the tissues, night came on and we had only a lamp to work by. There was no hæmorrhage from the proximal end of the artery during the second operation, but when the surgeon came to look for the distal end after ligation of the proximal, the hæmorrhage all at once came on and for a little while was terrible.

The patient never recovered from the effects of the hæmorrhage. On the third day thereafter he became hemiplegic, and soon afterwards aphasic. This condition continued for a week, when he died. In order to have any post-mortem examination at all it was necessary to make it at once, as the friends of the patients desired to take the body home for burial, and would leave in a few hours. The eye that had protruded was now as much sunken in the socket as the other. The skull was opened by Drs. Abbott and Shimonek, half an hour after death. There were some evidences of a pachymeningitis over the vertex. The sinuses were well filled with dark fluid blood. The brain was removed and carefully sliced off from above downward. A large portion of the left anterior hemisphere was found to be converted into a soft pulp of about the consistence and appearance of very soft *fromage de brie;* brain otherwise normal. The internal carotid, from its entrance into the cranial cavity, was examined without the discovery of anything abnormal in its gross appearance. It was the intention to have saved it for further examination but, unfortunately, it was included with the brain substance and sent away with the body. The posterior wall of the orbit was chiseled away and the orbital coutents carefully examined by myself. Nothing abnormal was found, except perhaps some increase of the adipose tissue. The ophthalmic vein may have been somewhat enlarged, but it was not compared with the vein of the other side. The wound in the neck was covered on its inner surface with a dirty slime, with no appearance of any attempt at repair whatever. The ligature of the distal end of the artery had sloughed off partly, and doubtless, had there been sufficient heart force, the man would have had another hæmorrhage.

As unsatisfactory as is the result of this post-mortem examination, it teaches a great deal. The only two pathological conditions which could by any possibility, I think, give rise to the physical condition which existed in this case, are aneurism of the internal carotid within the cranium, or rupture of the internal carotid within the sinus cavernosus. Aneurism of any vessel within the orbit could not give rise to all the symptoms; besides, by continued observation lasting a month I had excluded that condition, which I was anxious to find. Any malignant or other tumor of whatever nature was likewise excluded. As between an aneurism and a rupture of the internal carotid, the chances are always in favor of the existence of a rupture. In proportion to the number of cases observed, and where post-mortem section has been made, the cases of rupture are far more numerous. Aneurism of an intracranial artery is by far less frequent, in general, than rupture. The anatomical difference in the arterial coats here and in other parts of the body may account for it. The lesion of the artery within the sinus constitutes the salvation of the patient; it is the accident of position which determines whether the patient shall die instantly, perhaps, from a hæmorrhage into the brain tissue, or whether the peculiar complex of symptoms which constitutes pulsating exophthalmus shall supervene. There is one condition which was present in my case which has been mentioned as also occurring in other cases published: that is, the small pulsating tumor under the lower eyelid. It did not occur to me with equal force at the time, but afterwards it seemed to me that its presence and character may be sufficient to enable us to make a differential diagnosis between aneurism and rupture of the internal carotid.

H. Sattler has reasoned, and I think most correctly, to the effect that the exophthalmus, the tur-

gescence of the veins of the eye and the lid, etc., are all due to an overfilling of the veins from regurgitation of blood from the sinus cavernosus, and he shows how this may readily occur, given a rupture of the artery, with consequent influx of arterial blood into the sinus with each pulsation of the heart. This tumor is simply an exposed vein, enlarged at this point and receiving in its contents an impulse with each influx of arterial blood into the sinus. Now, if there is a rupture of the artery within the sinus, the tumor, when it occurs, will always pulsate, a soft, compressible, pulsating tumor not communicating an impulse to the finger. Such a condition could not result from mere pressure, but must depend upon regurgitation. Only an inflow of arterial blood into the sinus can occasion pulsating regurgitation here.

As to the failure to find the gross appearances of a rupture of the artery at the post-mortem, that does not prove that there had been none. I doubt if an actual lesion of integrity will ever be found where as long a time has elapsed from the making of the operation to the making of the post-mortem section as had been the case here. There is ample time for a tear in the arterial coats to have healed perfectly, if at rest, in apposition, and no interference with nutrition in the immediate vicinity. Only an examination under a lens will disclose the scar there.

In regard to the hæmorrhage, it is impossible to say positively that it would have occurred if the patient had been entirely prudent. It is possible that, if undisturbed, a clot may have formed and organized. Certain it is that the great loss of blood, lowering the general nutrition and acting on the area of brain already much lowered in vitality, assisted in the production of softening from malnutrition and thus brought on the fatal result.

A CASE OF NEPHRECTOMY.

Read before the Chicago Medical Society, Nov. 7, 1887.

BY CHARLES T. PARKES, M.D.,

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Last July I received a communication from a friend out of the city, stating that a patient had come under his charge who had been suffering for two years with cystitis, the diagnosis being based upon pus in the urine.

When I returned from my vacation in September, I found the patient awaiting me at one of the hospitals in the city. Upon examination it was found that a tumor could be easily palpated in the right side of the body beneath the ribs, large enough to extend down to the superior spinous fossa of the ileum, and reaching up to the hypogastric region below the liver. Upon the usual attempts at palpation and percussion, the dulness over the tumor was found to be continuous with the dulness of the liver. But the tumor appeared to me to be so elastic as to present some of the characteristics of a sac containing fluid. So I introduced an aspirator needle into it, and as was expected, found pus. As it presented none of the usual symptoms of a perinephritic abscess, it was diagnosticated to be a case of suppurative disease of the kidney communicating with the bladder through the ureter, the bladder being the outlet of the pus. There was no apparent disease of the bladder itself, other than that which would be present as a consequence of the foreign substance in the bladder.

Obtaining the patient's consent to an operation, an incision was made over the tumor to the outside of the erector spinæ muscle, and it was exposed; then the pockets of pus in the organ were located by the hypodermic syringe. On this occasion, three pockets of considerable size were opened, and drainage tubes introduced. About a pint of matter was let out. It was decided that these three pockets, that were found by introducing the syringe in different places, did not communicate with each other; they were separate cavities, and I think that is the usual condition found in this sort of disease of the kidneys; the pockets are multilocular.

One of them opened freely into the pelvis of the kidney, so that through the incision that was made the finger passed into the pelvis, and water injected into this went into the bladder, showing that there was a direct communication from this cavity of pus to the bladder and urethra. The drainage tubes were left in and the patient improved promptly, losing the fever and symptoms of pus accumulation and retention. For two weeks the improvement continued, then it was noticed that she began to fail rather rapidly and to show signs of fever again; there were signs of septic accumulation, and the tumor began to increase in size, so that from diminishing, perhaps half the size when first examined, it increased one third. As she was failing and the diagnosis was as complete as it was possible to make it, it was decided to perform nephrectomy.

There are some points of importance in the case: The drainage tube that went into the pelvis of the kidney gave free exit to quite a quanity of urine. I think that most of the secretion from that kidney came through the drainage tube; it was sufficient to wet thoroughly in two or three hours a large dressing; this dressing was sufficient to keep the discharge from the wound pure so that there was nowhere decomposition of pus so far as the outward manifestations were concerned. It struck me that if this drainage tube from the diseased kidney gave exit to such an amount of urine, and at the same time there was a good flow of urine from the bladder, it was a fair indication that the other kidney was not diseased, and that success would attend the removal of the diseased kidney, and it was decided to do the operation.

Sixteen days ago the operation was done. The patient was prepared in a certain way that I have followed in reference to all patients upon whom I do what is considered a serious operation, and I think it has a certain influence in preventing shock. Two or three hours before the operation is performed the patient is given gr. v. to x of quinine, and gr. ¼ of morphine. This medicine was administered to the patient of whom I am speaking, and the opera-

tion for the removal of the kidney was performed. The whole proceeding from beginning to end occupied an hour, and she went to bed without any manifestation of shock, and with a pulse of 112. She had no rise of temperature until the second day, and then it rose to 100°, subsequent to that it fell to normal and did not rise above normal until the twelfth day, when other symptoms appeared. During all this time the wound was absolutely aseptic. It healed promptly by first intention, so that on the seventh day all stitches were removed; the wound was solid from one end to the other.

There are some points about this operation to which I desire to call your attention, and I will pass the specimen around to show the nature of the trouble. You will see at the lower end a cavity, which was found to contain six or eight ounces of pus; there is another cavity in the interior of the kidney, the pelvis is entirely destroyed and filled up with adventitious material.

Here was an operation to be done upon a moderately sized woman for the removal of a tumor containing pus, a tumor which reached up under the ribs, down to the crest of the ilium, and forward to the anterior spinous process. There was a tumor containing pus in which large pockets had formed—what was the best way to remove it? There is no question in my mind that the best operation, in general, for the removal of the kidneys is the posterior operation. However, there are many diseases for which this operation is done where it is impossible to do it in another way than by the anterior operation, such as cases of cystic degeneration where the tumor is so large that it cannot be extruded posteriorly, but here was a tumor of moderate size, containing pus, in which it was desired above all things to avoid getting into the peritoneal cavity, a tumor which had sacs, the walls of which were in moderate degrees of thickness and strength, but could easily be broken upon pressure.

Therefore, the day before the operation I took a cadaver and experimented upon the lines of incision which would best expose this tumor and give exit to it. I finally decided upon the incisions represented in Figure 1. This represents the patient lying upon the opposite side from the diseased kidney. In these experiments I found that by a certain incision I could get the amplest room without doing injury to the colon or peritoneum; certainly no more likely to injure the colon, the peritoneum or other contents of the abdominal cavity than in an operation for the exposure of any of the large blood-vessels of the abdomen.

It is hardly necessary for me to state that there is some little difference between subserous tissue in the lower portion of the abdomen and that of the upper. In the lower portion it is very loose and easily separated, whereas at the upper portion it is quite thin and the peritoneum is more apt to be torn, hence more care should be used in an operation in this position. The commencement of the incision is supposed to be two inches above the anterior superior spine of the ilium. It is carried in a curved direction downwards and backwards to the last rib. The incision is carried through all the tissues, down to the fascia transversalis, everything is carried forward out of the way, and with the finger the dissection can be made, well behind the tumor; all the parts are separated, then a straight incision is made through all of them, straight back from the first incision and half way between the crest of the ilium and the last rib. The introduction of a ligature at the point of the posterior flap, and pulling aside, there is a wound one can get both hands into, and by exposing the kidney in all its parts, reach the tissues which one wishes to have under control, without difficulty. Figure 2. In this case as soon as the

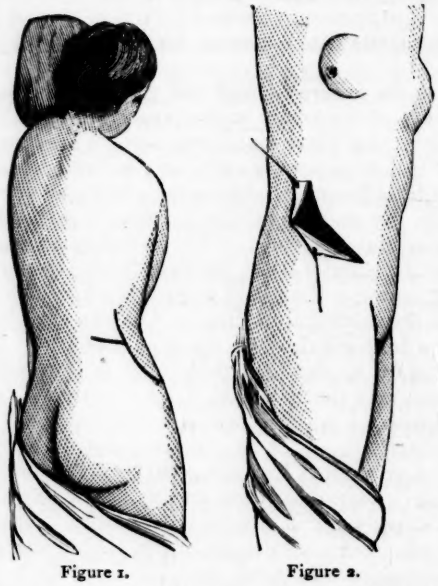

Figure 1. Figure 2.

incision was made the tumor presented itself, the finger could be carried around it in all directions so that the kidney with its blood-vessels, ureter, and all could be exposed to view.

I desired to adopt the plan, which is a good one to adopt in all tumors that are difficult to reach, of diminishing the size of the tumor, and attempted to divide it in halves by the cautery, but after a few strokes of the knife I approached a pocket of pus, and gave that up for fear of infecting the wound. I had very little difficulty by taking an eyed probe, threaded with a stout double ligature, in passing the probe through the centre of the pedicle, and then with the double ligature ligating it in halves. The ligatures controlled the circulation perfectly The vessels in the exposed stump were picked up and ligated one by one as a special security. Drainage was perfect, and the anterior wall of the peritoneum fell easily into place and united by primary intention. At the end of a week there was nothing left of this large cavity but the track of the drainage tube.

This case is an important illustration, it seems to me, of the safety of the posterior incision for tumors of considerable size, where the line of incision is carried out, somewhat in the way here indicated. The saddest part of my report is to come: Four days ago this patient was taken with symptoms of

cerebral trouble and suppression of urine, and she died with all the symptoms of uræmia this afternoon at 1 o'clock, sixteen days after the operation. As yet a satisfactory examination has not been made to determine the condition of the opposite kidney, neither has there been a satisfactory microscopic examination of the tumor. Several sections have been submitted to examination, but none have shown tubercular bacillus.

The post-mortem examination showed a highly congested swollen organ in the remaining kidney, the capillary vessels were ruptured in many places.

LOCAL MASSAGE FOR LOCAL NEURASTHENIA.

Read before the Section for Clinical Medicine, Pathology, and Hygiene, of the Suffolk District Medical Society, November 9, 1887.

BY DOUGLAS GRAHAM, M.D.,
OF BOSTON, MASS.

Neurasthenia, as I understand it, may be either general or local, affecting the nerves or nerve-cells of all, or any part of the cerebro-spinal or sympathetic system. Its manifestations are those of exhaustion or too easy exhaustibility of nerve-force; and its pathology, malnutrition of the nerve-cells, involved with concomitant instability of their circulation in the form of anæmia or hyperæmia, or alternations of these. It predisposes to, it accompanies, it results from disease; the nervous shock and the tedious recovery from injuries point to other sources, and it may be caused by overwork, worry or sheer laziness. The agreeable fatigue after a satisfactory day's work, that insures sound sleep, may be regarded as a healthy form of neurasthenia, if the Hibernianism may be pardoned.

It is a matter of common observation, that those who are compelled to hard manual labor, seldom suffer from nervous prostration; and amongst the more fortunate who may be predisposed to neurasthenia, those who are deeply interested in some hobby or occupation that keeps mind and body active, have found the best means of prophylaxis. The same means that serves for its prevention, also supplies us with a clue to one of the most valuable agents that can be employed for its relief in recovery. Exercise keeps the circulation active, but requires effort of brain, spinal cord and nerves, as well as muscles, at a time when our object may be to afford rest to one or all of these parts of an overtaxed nervous system. Massage supplys this want, and will keep the circulation going with a minimum or no expenditure of nerve-force from the patient, and deep massage without friction will lessen the beats of the heart, and afford it rest also. Nay more, for it is getting to be the fashion not only amongst the laity, but also with some physicians, to say that massage imparts energy to the patient, though I confess I do not exactly understand what this means. Certainly, many who submit to massage feel much more vigorous, light, and supple after even the first application than they did before it. But may not this rather be owing to rousing of their latent energies, and restoring the equilibrium of their forces, by facilitating the circulation of blood, lymph, and the transmission of nerve-force?

I have previously stated elsewhere that in cerebral exhaustion the relative value of massage was almost *nil*, and that out-of-door exercise was of paramount importance; but I have since found reason to modify this in favor of more massage and less exercise. In such cases, massage of the head alone daily, or every other day, is better than applying it all over the patient, unless there be a rare idiosyncrasy that will not allow the head to be manipulated.

There are people, not a few, who, when using their brains, suffer from uneasy sensations in the lumbar or dorsal region, and these discomforts continue after the cessation of study, causing wakefulness. Generally, there is also some spinal irritation in the region affected. In such cases, massage of the back alone will often induce sound sleep, and, next day, the patient feels inspired with faith, hope, and courage, in place of doubt, dread, and fear of meeting appointments. With these cases, a much more marked effect is produced by local than by general massage, except when the tenderness of the muscles and spinal irritation is extreme, unfitting them for every kind of work, and the massage should be general, omitting the back at the first *séances*, but gradually approaching it at subsequent ones.

In other cases of what may be called local neurasthenia, if the term can be allowed for this purpose, such as writer's cramp, or the cold, small, and feeble muscles resulting from injury, disease, or disuse, massage and exercise, carefully adapted, have given excellent results. To these have recently been added another affection; namely, laryngeal cramp of musicians and speakers, for the local treatment of which electricity and massage are considered the most effectual measures.

It is not the purpose of this paper to go into the details of applying massage, nor to consider its minute effects; but I think it will be a revelation to many to experience either in their own heads, or to observe in those of their patients, the light, comfortable, delightful feelings that are produced by the resistance of a skilled manipulator to forward, backward, and lateral movements of the head. The impression is that the interior of the head has been benefited, and the effect is hardly secondary to massage, which rather gives the impression that the exterior has been improved.

The following cases seem to me sufficiently worthy of notice as examples of the conditions mentioned:

Case 1.—A. J., 23 years of age. Three years prior to my being called to him, he had been running races at college at the same time that the functions of his brain flagged, and study had become so irksome, producing headache and insomnia, that he gave it up for a year. At the end of that time he returned to college for a year, and, to use his own words "patched up and graduated," and for the year before I saw him he had been trying to recuperate by resting at home. At this time, even walking sometimes produced discomfort in his head. At my first visit he had been suffering from headache, with tol-

erably acute pains in the external branches of the fifth pair of nerves, and had but little sleep for four nights. The immediate cause of this had been too much conversation with friends on the evening of a holiday. Massage of twenty minutes to the head alone, in the evening, almost relieved the headache and neuralgic pains, and was followed by an excellent night's sleep. After this massage of the head, with resistive movements to the muscles of the neck, was repeated seventeen times in twenty-four days, and the improvement in sleep, in comfort of the head, and in the power of using his mental faculties was so great, that it became a serious question whether he should not abandon a six months' sea-voyage that he had engaged. Marks of improvement that may be mentioned were, that when he had an occasional wakeful night, he felt no worse on the following day; he had none of his former anxiety in taking charge of his class in Sunday School. He attended a large party late one night without any after-effects, and he walked about freely, and all while he was preparing for an absence from home of six months or a year. Medicine had been laid aside before massage was tried in this case.

Case 2.—Rev. D. L., aged 66 years, has a good appetite and is well nourished, weighing about 180 pounds. For twelve years, he had suffered much from wakefulness. He requires from eight to nine hours of sleep, but seldom got more than five or six hours of broken, unrefreshing slumber. At times he would fall asleep soon after retiring, to wake up in a short time; at others, he would lie awake for hours before getting to sleep. Besides discomfort about the head, he had still more distressing dull ache and uneasy sensations in the lumbar region, aggravated by study or wakefulness.

He found some relief from giving up his ministerial duties ten years before I saw him. He came to me on the 25th of January of this year, and after thirty-five minutes of massage on his head and back at noon-time, he passed the remainder of the day in comfort, and that night and the following had seven hours of sleep each, so that when he came to me on the second day after massage he was hopeful and radiant. Massage was repeated at 11 A.M. on head and back, with increase of comfort to the patient. He did not sleep so well the following night as he did the two preceding nights, but he realized that he was quiet and serene, and felt that he was resting, and next day was refreshed. This day he had a refreshing sleep of an hour and a half in the afternoon, which he never could obtain before when well, and that night slept steadily for seven or eight hours. This patient had massage three times weekly, at or near noon, for seven or eight weeks, and the result of the first week is a fair average of the succeeding weeks: Five good nights of sleep out of six, with a nap of an hour or two in the afternoon; and when wakeful, he felt that he was resting, and, the following day, was not miserable from loss of sleep, as before massage; vigor of body and mind gradually increased, and he could take part in lectures, sociables, and other evening entertainments without loss of sleep, as formerly. Mild tonics and stimulants always made this patient worse. An epiphora that had troubled him for many years disappeared under massage of the eyelids.

Case 3.—Mr. E. B., 35 years of age, had been in good health for several years, and attended to his business, which involved great detail, from 9 A.M. to 6 P.M., with an hour off at noon for lunch. He had remained in the city all the previous summer, and felt very well when he went away for a vacation of several weeks to Colorado, returning on November 20. From the time of his return he began to suffer from headache, which caused him to be out of his office several hours daily; and, by the end of three weeks, this became suddenly so much worse that he was obliged to leave his office altogether. There was a slight elevation of temperature, but still he had a good appetite, and slept well. I gave him massage of the head on three successive days, and the headache was relieved only while the head was being manipulated, and for a short time afterwards. When massage was being done on the right side of the head, the ache would disappear and increase on the left side; and, on doing both sides they were relieved, and the ache increased in the back of the head; and on *masséing* the back of the head, the discomfort would disappear from there and increase in the forehead, and, on manipulating this region, it would disappear altogether for a time. In other cases, I have chased pain in this way all over the patients without being able to dislodge it completely, only temporary relief being afforded at the place of application.

Case 4, will serve to show still farther that it is not always well for those who are inclined to nervous exhaustion to give up their employment when working easily, and go away on a vacation. Miss M. P., 34 years of age, teacher in a High School, had been subject to headaches all her life. Her parents had highly nervous temperaments. One year before I first saw her, the headache had been so severe that she was confined to her bed for seven days with pains all over her, and elevated temperature, and since then, the headaches have been more frequent and more severe than before, and usually accompanied with nausea and vomiting Evidently the case was one of migraine. The ache was on the left side of the head, in the left eye, and more especially over the left tempero-parietal region, accompanied with a crawling sensation at the back of the head, and soreness of the muscles of the back of the neck. The left side of the face was smaller than the right. She had great weariness and weakness in her arms, so that it tired her even to raise them. In the cervical and upper dorsal region, there was much tenderness on pressure over the spinous processes. Her appetite was good, bowels regular, and she slept well. Notwithstanding the increase in frequency and severity of headaches for a year, she had gained in weight, mainly adipose, so that she weighed 160 pounds, her ordinary weight being 123 pounds. She continued her duties as a teacher, and found that she felt better when occupied in this way than when not feeling compelled to do anything. Saturdays and Sundays were her poorest days, and a vacation

of two months in the South ten months before she came to me was of no apparent benefit to her, but, she thought, made it all the harder for her to begin her professional duties again. Correcting examination-papers fatigued her more than anything else. She could walk three or four miles with ease.

The first massage of thirty minutes on the head alone left this region "perfectly comfortable" until the second massage was repeated, two days later, when this comfort was extended to the manipulated regions—head, neck, arms, and shoulders—and a burning sensation between the shoulders was also relieved. In four weeks, a continual wooden, numb sensation of the left side of the head was not only relieved temporarily, but did not return; and, corresponding objectively to this, her tough, indurated scalp had become soft and supple. Sixteen days after she came to me she could not stand, and had an account of weak and uneasy sensations in the back of her neck, as if her head would drop backwards when she attempted to hold the book, but she could sit and read with ease. This was at the catamenial period, when she was generally worse in every way. But, two days later, she was much surprised to find that she had recuperated more quickly, and to a greater extent, than ever before. This patient had massage twenty-five times in ten weeks, with increasing improvement, and this continued after treatment was omitted, so that she was practically well—sufficiently well to enjoy her summer vacation, which helped to confirm the benefit previously received. Six months later, she reported that she had continued quite well. The following spring her troubles returned in the same way, but less severely than formerly. They were speedily removed by massage, and stayed away for a year, when, again, there was a slight relapse, and more speedy recovery under massage. At times, she had found nux vomica more beneficial than any other internal remedy, but even this had lost its effect before massage was tried.

Case 5.—Mr. J. B., aged 33 years, has always been a nervous man. He often felt fatigue in the lumbar region, but this he regarded as a matter of course, and he was always capable at business until six years before I first saw him. At that time he was in an elevator which was being tested against sudden falling by means of some "sure patent preventive." The experiment failed, and the elevator fell eighty feet with six men in it. While descending, our patient sat as tailors do, hoping thereby to diminish the shock of stopping. He got out apparently none the worse, walked four squares to his newspaper office, for he was then an editor, and dictated an account of the accident. He stayed at home for five or six weeks, but was not confined to bed. After this he resumed his duties, but it was eight months before he could walk a mile. For a long time in the evening, the region of the spine was painful, but relief was often found by pouring cold water upon it; at other times, from very warm water. During vacation he was perfectly well, and played lawn tennis. For three weeks before I saw him he had suffered from pain in his back and legs, and could walk but a very short distance at a time. Conversation and reading quickly tired him, and part of either would escape his attention. A few hours at business would cause nausea and headache, and make him feel generally used up. Appetite, bowels, and sleep normal.

At my first interview there was much tenderness on pressure over the spinous processes and muscles of the back; but, after three massages in nine days, they could be manipulated quite vigorously. After six massages in eighteen days, he was practically as well as ever. Manipulation was exceedingly agreeable to this patient, and, while it was being done on either leg or hip, the agreeable sensation was felt in the back and in the other leg and hip, as well as at the seat of application. About once a year, usually in the fall, after his vacation, this patient finds himself used up, as just described, and he has learned by experience to rely on the prompt relief afforded by massage. He has also found wine of coca of some use. I have frequently made similar cases worse by using massage too vigorously to begin with.

Case 6.—When Mrs. M. W. came to me in October, 1884, she was 58 years of age, and weighed 213½ pounds. Her adipose tissue was supple and of good consistency. She had then been suffering for three years from a continual, distressing feeling of weakness in the right leg and thigh, which first made its appearance when there was some enlargement of the internal saphenous vein, but this had long ago disappeared. On examination, the whole limb seemed normal in every respect. The patient was not at all of a nervous, hysterical, or imaginative temperament, having been at the bombardment of Fort Sumpter, once in a steamboat explosion, and once made a long voyage in a vessel with the cargo shifted, so that there was imminent danger of the vessel upsetting, besides having travelled twice around the world.

A walk of a square was as far as the patient could go with comfort, and a walk of one-fourth of a mile caused great fatigue and increased the feeling of weakness. She had tried absolute rest for one, two, and three months at a time, during which she lost flesh, but the limb did not improve. At my request, she omitted potatoes, sugar and butter from her diet and began walking for two minutes every hour during the day, which was increased daily one minute every hour. Massage was given to the leg, thigh, and hip three times weekly. The first time it comforted and rested the limb, and after this passive and resistive movements were also given, which at first tired the limb, but this was at once counteracted by manipulations. At the end of two weeks she could walk half a mile without fatigue—twice as far as she could before with great fatigue—and a distressing pain that previously came after slight exertion at the exit of the sciatic nerve had not been felt for a week. At the expiration of four weeks the patient walked a mile and a half with ease, feeling but slight general fatigue thereafter, and the limb that had been weak was not so tired as the other. It was by her own wish that massage was repeated occasionally for a few weeks longer, and she has continued well ever since. Under the restricted diet she lost 7½ pounds, and no doubt but this aided her recovery.

Case 7.—Miss E. H. was 39 years of age when I attended her in the winter of 1883–84. She is irregularly astigmatic, and suffers from headache, and this is worse at the menstrual period, which recurs every three weeks and a half, accompanied with pain. She suffers much at times from indigestion. She is a lady with a strong mind, a clear intellect, an unwearied conversationalist, and, in the language of her physician, who sent her to me, "she is a preëminently hyperæsthetic subject, and would be hysterical, did not the brain govern the *cerebrum abdominale.*" For five years she has suffered with a pain in her right knee, impairing locomotion, and the latter part of this time there was pain also in the outer and posterior aspects of the thigh, where the muscles were considerably atrophied—so much so that her other discomforts seemed small in comparison with those of the limb. The trouble in the limb came when she was run down from nursing a sick relative, and coincident with this a severe cough that had been increasing every winter disappeared, and did not return. During these five years under rest, with and without fixed dressings, changes to country and seashore, the use of tonics and sedatives interally and blisters externally, there would be sometimes a little improvement in the knee, but always followed by speedy relapse on slight or no provocation, such as accidentally hitting it against something, or being obliged to use it a little more than usual. At times the pain was relieved by walking, at others made worse. It was aggravated by cold weather and by riding in a carriage.

Examination showed that the affected limb was much smaller than the other, the skin cold and dry, the muscles atrophied, but there was nothing especially noticeable about the knee, save slight puffiness and great tenderness on pressure upon the internal condyle, not in the skin. Owing to pain and weakness, which were aggravated by walking, she could take but a few steps when massage was begun, and the only symptom then in her favor was steady sleep. Massage was applied three times a week for eleven weeks and a half, being omitted for a few days at one time on account of unusual pain in back, stomach and intestines. For the first four weeks, massage, with gradually increasing exercises, was confined to the affected limb, with the result that she was at the end of this time taking four walks daily of ten minutes each, besides exercises of standing on tip-toe, stepping up two steps at once, holding the limb out extended, and elevating it sideways when lyir g down. From the first the skin became warmer, softer and suppler, and the muscles fuller, as shown by an in crease of one-half inch around the calf; one-fourth inch at the knèe; one-eighth inch three inches above the patella; and one-fourth inch seven inches above the patella. When treatment was discontinned these gains were one-half inch, five-eighths, three-eighths, and seven-sixteenths, respectively. But at the end of four weeks the pain was still about the same, notwithstanding the improvement in locomotion, nor had it entirely disappeared when massage was given up.

As soon as she made known the heart and abdominal troubles, massage was applied for ten minutes to each of these regions also, which was during the last seven weeks of treatment. Headache was improved, sleep became more refreshing, digestion easier. During the last eight or ten days of treatment, it became evident that, though the patient was much better, and could go about much more freely on foot and in a carriage, she had come to a stand-still, and consequently the treatment was terminated rather sooner than she wished. A year later I saw her and she was the picture of health. Her appetite was enormous and digestion good. She had gained many pounds in weight and could walk freely, but still suffered from headache. She considered, and I think rightly, that massage had given her a start, and improvement had continued since it was omitted, for no other treatment had been used.

Amongst people who may be considered perfectly well, there are few, if any, who have not some weak points. When fatigued or worried I suffer from tension and dull ache throughout my whole right side. In September, 1884, when in Paris, I had one man give me half-an-hour's massage on my right side only, at 2 P.M., and another half-an-hour's massage on same side at 5 P.M. The manipulation was slight, superficial and rapid and at the time of its being done seemed very ineffectual. But that night I never slept so sound in a railroad train in all my life, as I did from Paris to Calais, and while crossing the channel I was not even sick. Two days later I played deck quoits all one afternoon when the thermometer was 80° in the shade and the ship rolling. Next morning my playmates could scarcely get out of their berths, they were so stiff and tired, and so was I, but the fatigue was all confined to my left side and not to the right as formerly.

It may be said that these were not very sick people, but they are cases that prove troublesome to physicians, and they were certainly in conditions which any one of us would gladly be freed from. It is not necessary that I should dwell upon extreme cases of nervous prostration that have been treated by absolute rest, forced feeding, massage and electricity. I could give further details of the other mentioned cases and also of similar ones which would seem to justify the following conclusions:

1. That massage induces sleep.

2. That even when massage is applied in the forenoon its soporific effects may not disappear before bedtime; though in general the later in the day massage is used, for promoting sleep the better.

3. Disagreeable feelings of drowsiness and languor do not necessarily intervene between massage in the forenoon and sound sleep at bedtime. Aptitude for rest or work generally follows massage.

4. When people are wakeful after massage they may not be restless nor feel the loss of sleep on the following day.

5. Spinal irritation is relieved or disappears under massage.

6. For local neurasthenia there is no need of general massage, unless the whole system be secondarily influenced.

7. When affections have come to a stand-still under massage, improvement may yet go on after massage has been discontinued.

8. For improving the nutrition of nerves and muscles, restoring natural sensation and motion, massage may succeed when other means have failed.

9. Deep massage without friction has proved of more value in my hands than all other forms of massage put together, in the cases herein considered.

10. Massage can be overdone, producing opposite effects from a moderate application.

11. Besides massage, carefully-graded exercises at regular times, are valuable accessories in the restoration of motion.

12. Massage is not the only means of treatment for neurasthenia. Its selection is usually decided upon after the failure or exhaustion of every other means; in the same manner that the shrewd old divine decided that it was not wise to let the devil have all the good times to himself.

MEDICAL PROGRESS.

NERVOUS ORIGIN OF RHEUMATOID ARTHRITIS.—At the meeting of the Royal Medical and Chirurgical Society, on November 22, DR. ARCHIBALD E. GARROD read a paper on this subject, of which the following is an abstract: Some of the arguments which have been put forward in support of the view that rheumatoid arthritis is a disease of nervous origin, are examined in the light of a large number of cases. The statistics given are based upon a series of 500 cases. Arguments are adduced in support of the following propositions: 1. That the causes of rheumatoid arthritis are such as might be expected to act upon the central nervous system. 2. That the distribution of the lesions is such as would be likely to result from nervous lesions. 3. That the distribution of the lesions is similar to that of certain arthropathies of spinal origin. The influence of heredity is first discussed. In 216 cases out of 500, there was a family history of joint disease, sometimes of more than one variety. There was a history of gout in 86, of probable gout in 10, of rheumatism in 64, and of other conditions which may be classed together as probably rheumatoid arthritis in 84. These figures can only approximate to accuracy as they are based upon information given by the patients. The influence of uterine causes is next discussed, and it is shown that when the female cases are arranged according to the age of the patients when the disease commenced, there is a steady increase in numbers up to the period of the menopause and a steady decrease after that period. Amongst the male cases there is no such regularity. Of the 500 patients 411 were women, and only 89 men. The influence of anxiety and care, mental shock, injuries, damp, cold, and previous rheumatic attacks, are discussed, and each of these is shown to have a share in the causation of the disease. Stress is laid upon the extreme symmetry of the joint lesions in rheumatoid arthritis, and some examples are adduced. Reasons are given for believing that there is a tendency for the joint lesions to advance up the limbs from the periphery towards the trunk. This order of invasion is by no means constant, but in particular instances it is well marked. In the localized form of the disease, it is, of course, absent. The knees rank only second to the hands in liability to rheumatoid arthritis. Lastly, it is shown that there is a close resemblance between the distribution of the joint lesions in rheumatoid arthritis and in the recorded cases of arthritis following spinal concussion, whereas in more local spinal injuries one or more large joints are usually affected, as in tabes dorsalis. The associated nervous phenomena, such as muscular wasting, increase of tendon reflexes, etc., are regarded as secondary to the joint lesions, and as therefore lending no efficient support to the theory of the nervous origin of rheumatoid arthritis. SIR DYCE DUCKWORTH agreed with the views expressed in the paper. The morbid anatomy of this disease required very much more investigation than had at present been given. DR. ORD had been interested in this subject for many years. The joint troubles were to be regarded rather as symptoms than as the whole disease. He came to the conclusion that nervous influences had a great deal to do in the causation of this disease. He believed that nervous influence was reflected from the uterine organs to the spinal cord and on to the joints. The cord also exerted a primary influence. Injury might lead to a joint affection, and then the nervous system tended to propagate the joint change to other joints. He compared rheumatoid arthritis to progressive muscular atrophy. In a case of chronic cervical pachymeningitis there was much muscular and cutaneous wasting, and later a remarkable degree of chronic osteo-arthritis developed. In another case of spinal injury joint trouble followed at a long interval the muscular wasting. DR. BUZZARD said that in association with Charcot's disease of the joints there was a much clearer evidence of disease in the central nervous system than was the case in rheumatoid arthritis. He alluded to the various crises and paroxysmal secretions occurring in tabes dorsalis as evidence of the involvement of the central nervous in most cases. Eight years ago he promulgated the theory of a joint centre in the medulla oblongata, and he brought forward arguments to show that acute rheumatism might be an acute affection of the medulla oblongata. DR. HERRINGHAM alluded to the belief which he shared that cold and damp were very potent causes of rheumatism and rheumatoid arthritis. DR. GARROD, in reply, said that he should have classed Dr. Ord's case of myotrophy as one in which the arthropathy was due to definite nervous lesions, and therefore not of the same category as rheumatoid arthritis.—*Lancet*, Nov. 26, 1887.

PLASTIC SURGERY.—MR. C. B. KEETLEY says: It will be granted that all parts of the body are susceptible to septic inoculation, therefore one of the first rules of plastic surgery should be: *Thoroughly disinfect the parts to be operated on, the hands of surgeon, assistant and nurse, the instrument, sponges, ligatures, sutures and dressings.*

As a preliminary to the use of such germicides as sublimate and carbolic acid, a prolonged washing and scrubbing with the liquid potash soap of Dr. Duncan, of St. Petersburg, is very useful. This soap has two excellent properties, 1, it is an extraordinary powerful solvent of dirt; 2, it is itself instantly soluble in cold hard water or antiseptic lotions, so that it may be said to promptly "do its business and go about its business." But, bearing in mind that in plastic surgery, one almost always desires union by first intention, and that irritants such as the stronger germicides are not favorable to that, *an ideal plastic operation should be aseptic rather than antiseptic.* For this reason I generally, while keeping the instruments in a tray of carbolic, dip them into a basin of recently boiled, not boiling water before touching the patient with them. But when they are even temporarily laid down again, it should be either into the the tray or upon a damp carbolized towel, disposed around or near the site of the operation. The same recently boiled, not boiling, water is used as a douche and for the sponges. Some persons would prefer boracic lotion. I greatly doubt whether it has, for these purposes, any advantage over the boiled water. If the operation were to occupy days instead of say half an hour, it would be a different matter.

With regard to ligatures, they should scarcely ever be used in a plastic operation. Temporary pressure with sponge or forceps almost always suffices to check hæmorrhage. The boiled water used at a temperature of about 120° will assist. Hare-lip pins or silver sutures can be often arranged to not only adjust the parts but also at the same time to control an obstinate vessel. The objections are manifest to a number of catgut knots in a wound where perfect antisepsis is impossible. I believe it may be laid down as an axiom applicable to surgery in general that *even with the aid of antiseptics, the difficulty of obtaining union in a wound without suppuration increases geometrically with the length of time a foreign body is left unabsorbed in the wound.* I may not be expressing it properly, but I mean that when, in a simple osteotomy, even though it be done antiseptically, a large splinter of bone be chipped off and left *in situ*, suppuration is ten times more likely than if no such splinter had been made. Very probably it is the case that, even with carefully applied antiseptics, a few germs find their way alive into the wound, but their chance of surviving and multiplying depends mainly upon their finding or not finding some dead or half dead organic nidus to receive them. It is particularly desirable to keep catgut out of wounds when complete antisepsis is often impossible.

As a prophylactic against tedious and troublesome hæmorrhage the preference of scissors to the knife for the division of all structures except occasionally the skin itself, is to be strongly urged. With regard to the skin, in dividing it the precision attained with a sharp scalpel recommends the latter.—*Annals of Surgery*, August, 1887.

THYMOL IN DIABETES MELLITUS.—In the recently established therapeutic clinic of the University of Siena, PROFESSOR BUFALINI has thoroughly studied the action of thymol in two cases of diabetes, the object of his investigation being twofold. He first endeavored to ascertain the effect of thymol upon the excretion of sugar and, secondly, whether its well-known power as an intestinal disinfectant would exert a favorable influence upon the condition known as acetonæmia.

To determine the former question, the patients were first placed upon a mixed diet of soup, meat, eggs, bread, coffee, milk and wine, the amount of each being given by weight. The quantity of fæces and urine, the density of the latter and its percentage of sugar were also ascertained, as well as the bodily weight in one case, the other being too feeble to be moved. After from a week to ten days of such observations, thymol was given in doses of 30 to 45 grains per diem and continued long enough (to the two cases 12¾ drachms were given in eighteen days) to demonstrate that, while the patient is on a mixed diet, this substance exerts no appreciable effect upon the quantity of urine, its specific gravity, or its percentage of sugar.

When the patient is on an exclusively proteid diet, the case is different and requires some explanation. It is a common observation that as soon as a diabetic is placed upon an albuminoid diet, the sugar in his urine will diminish, perhaps entirely disappear. A persistence in this regimen is, however, apt to be followed by digestive disturbances, with abnormal intestinal putrefaction, and a speedy reappearance of the absent, or increase of the diminished sugar. This occurred in one of Bufalini's cases. Under a proteid diet continued for one month, the sugar had entirely disappeared. Continuing the same diet, gastro-intestinal disturbances (anorexia, vomiting, borborygmi, diarrhœa) set in and were soon followed by a reappearance and steady increase of the sugar. At this juncture it occurred to Bufalini to administer thymol, he believing with his colleague, Martini, and with the writer of this article, that it is the best known intestinal antiseptic. The result was immediately favorable, and the conclusion with reference to the drug is that it is not only useful, but necessary, in cases of diabetes placed upon an exclusively proteid diet. No deleterious effects from the use of thymol were observed by Bufalini, and none need be apprehended, although, in the writer's experience, smaller doses (from ℥ss to ℥j) are quite efficient in abnormal conditions of intestinal putrefaction.

The second object of Bufalini's research was to test the effect of thymol upon the condition known as acetonæmia. Both of these patients presented all the symptoms of this condition. They were somnolent, greatly prostrated, and they exhaled the odor, and their urine gave the reactions of this substance. Under the use of thymol, the characteristic odor of the breath diminished and the reactions of acetone in the urine became faint, while the general condition improved. Bufalini holds that these results of the thymol treatment establish the fact that acetone is formed in the intestine by abnormal fermentation of the sugar excreted by this channel, and that the ferment is an altered gastro-intestinal mucus.—*Med. News*, December 3, 1887.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JANUARY 7, 1888.

MEDICAL LEGISLATION.

In continuing the discussion of this subject from page 815 of THE JOURNAL for December 24, 1887, we cannot express more concisely our views regarding the proper standard of medical education that should be required for a license to practice medicine, than by quoting the third section of the law now in force in Minnesota, with the interpolation or addition of two or three lines enclosed in brackets, as follows: "Sec. 3. All persons hereafter commencing the practice of medicine and surgery in any of its branches in this State, shall apply to said Board for a license so to do, and such applicant, at the time and place designated by said Board, or at a regular meeting of said Board, shall submit to an examination in the following branches, to-wit: Anatomy, physiology, chemistry, histology, materia medica, therapeutics, preventive medicine, practice of medicine, surgery, obstetrics, diseases of women and children, diseases of the nervous system, diseases of the eye and ear, medical jurisprudence, and such other branches as the Board may deem advisable; and present evidence [of having studied medicine three years, including] attendance on three courses of lectures of at least six months each, [and two courses of clinical instruction in a general hospital containing an average of not less than fifty patients]; said Board shall cause such examination to be both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine and surgery. When desirable said examination shall be conducted in the presence of the Dean of any medical school or the President of any medical society of this State. After examination said Board shall grant a license to such applicant to practice medicine and surgery in the State of Minnesota, which said license can only be granted by the consent of not less than seven [of the nine] members of said Board, and which said license shall be signed by the President and Secretary of said Board and attested by the seal thereof. The fee for such examination shall be the sum of $10, and shall be paid by the applicant to the Treasurer of said Board, to be applied by said Board towards defraying the expenses thereof—and such Board may refuse or revoke a license for unprofessional, dishonorable or immoral conduct."

With such a standard of preliminary general education for the medical student as we suggested in THE JOURNAL of December 24, 1887, and the foregoing section of the Minnesota law with the amendments in brackets, enforced by a competent and impartial State Board of Examiners, in each State, there would speedily follow a marked improvement in the educational status of the profession, and a corresponding diminution in the *number* of both medical students and medical schools. But the actual permanent benefits to be obtained from the creation of such legal standards of education for the medical profession will depend very much upon the competency and faithfulness of the several State Examining Boards. Consequently the questions, by whom shall such Boards be appointed, what shall be the qualifications necessary to render any person eligible for appointment on such Boards, and to whom shall the members of such Boards be responsible for the proper performance of their official duties? present more difficulties in arriving at satisfactory answers than in adjusting any other details connected with medical legislation. We will therefore reserve a more full discussion of these questions until next week.

THE NEXT MEETING OF THE ASSOCIATION.

Four short months intervene between the present and the time for the next meeting of the American Medical Association. While the steady growth of the Association promises success for its future, the necessity is as imperative as ever that the officers and members should coöperate each year to make the annual meetings as successful as is possible from a scientific standpoint, and as harmonious and pleasureable as possible from a social standpoint.

The number of papers has greatly increased during the last few years, and especially since THE JOURNAL was founded. In many Sections more are

offered than can be read. While, therefore, there is no dearth of material, experience has demonstrated that the value of the papers presented to the Sections depends chiefly upon the thoroughness with which their officers canvass the best authors and observers for contributions.

Since the number of papers are annually increasing all that contemplate presenting contributions should study to make them concise and to the point. The following rule of the Association must be borne in mind: "No paper shall be read before either of the Sections, the reading of which occupies more than twenty minutes." Longer papers may be read in abstract. It must also be remembered that "it shall be the duty of any member of the Association who proposes to present a paper or report to any one of the Sections to forward either the paper or a title indicative of its contents and its length to the Chairman of the Committee of Arrangements at least one month before the annual meeting at which the paper or report is to be read." And further: "It shall be the duty of the Chairman and Secretary of each Section to communicate the same information to the Chairman of the Committee of Arrangements concerning such papers and reports as may come into their possession."

Regard for these rules is necessary in order to give the Chairman of the Committee of Arrangements time to prepare the annual programme, to arrange the order in which papers are to be read, and to have the programmes printed for distribution at the beginning of the meeting. In times past papers have been crowded upon the programme during the month preceding the meeting, but many are annually disappointed because they send their papers too late.

The next meeting will be held in Cincinnati, and will begin on the second Tuesday of May. We can safely prophesy an unusually large and successful meeting, for the central location of Cincinnati will make it easy of access from all directions. The city itself offers many attractions to strangers and the Committee of Arrangements, with its able Chairman, Dr. W. W. Dawson, of that city, will make every possible arrangement for the comfort and pleasure of the members in attendance.

We would also call attention to the following rule of the Association regarding papers to be read in the Sections:

Resolved, That the several Sections of this Association be requested, in the future, to refer no papers or reports to the Committee of Publication, except such as can be fairly classed under one of the three following heads, viz.: 1st. Such as may contain and establish positively new facts, modes of practice, or principles of real value. 2d. Such as may contain the results of well-devised, original experimental researches. 3d. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance. (*Transactions*, Vol. 16, p. 40.)

Members are also requested to note the fact that the Committee of Publication is vested with discretionary power in the preparation and publication of the matter referred to it by the Sections for publication.

ELECTRICAL RESISTANCE IN THE HUMAN BODY UNDER PATHOLOGICAL CONDITIONS.

That the body offers considerable resistance to the passage of electrical currents is well known. And that much variation in this resistance exists in different individuals, and even in the same person at different times, was long ago demonstrated. This variability is known to be due in part to the use of currents of different strength, of electrodes of different sizes, to variations in the moisture or dryness of the skin, to the thickness of the skin, to the distance apart of the electrodes, etc. In making comparisons of the resistance in many persons much care must be taken to eliminate these various sources of error.

Very few observations upon persons in a pathological condition made with accuracy have been recorded. A year ago Charcot called attention to the fact that electrical resistance in the body was constantly lessened in Grave's disease and in certain cardiac affections, notably asystolism, (*Gaz. des Hospiteax*, 13–15, 1886). These observations of Charcot have led R. NORRIS WOLFENDEN (*The Practitioner*, December, 1887) to make most careful investigations of the same kind upon Grave's disease and less extensively upon others. To eliminate sources of error he used uniformly the same electrodes, placed upon the same part of the body in each case, *i. e.*, on the nape of the neck and on the top of the sternum. He tested with the resistance coil his current so that he had one of uniform measured strength. In this way he tested the resistance in fifty healthy persons and found it between 4000 and 5000 ohms with a current of 15 volts. In eighteen cases of undoubted Grave's disease he found this resistance to vary between 500 and 1500 ohms. In eight of these it was 1000 or less. This fully corrobcrates Charcot's observations. In ordinary goitre the resistance is not lessened, but was found to vary between 5000 and 6000 ohms.

In one case of malignant disease of the thryoid it was found to be 8000. In some cases of hemiplegia it varied from 1300 to 4000; in the same number of cases of epilepsy from 1000 to 4000; in three cases of cerebral softening it was 3000; in two cases of paraplegia it averaged 3000; in one case of general paralysis 6500; in one case of infantile paralysis 2600; in a case of hystero-epilepsy 1600 ohms, and in one case of chorea in an adult it was 350. Dr. Wolfenden further noticed that a current of only two or three volts would in Grave's disease produce marked deflection of the galvonometer needle, with such a current no deflection would occur in health. The bodily resistance is therefore almost nothing in this disease. Dr. Wolfenden can offer no explanation of these changes.

FOOD ADULTERATION IN ENGLAND.—MR. C. E. CASSAL, the public analyst for Kensington, reports that of 499 samples analyzed under the "Food and Drugs Act" 28 per cent. were adulterated, and 17 per cent. of inferior quality, the greater part of the adulterated or inferior samples being specimens of milk. The largest proportion of adulterated samples was from the Sunday milk, only 34 per cent. of the samples being genuine. The amount of fines for all this adulteration was only £37, knowing which one does not wonder at the extent of the adulterations.

J. K. BARTLETT, M.D., long well known to the profession as one of the oldest and most respected members of the profession in Milwaukee, Wis., has removed from that city, and taken his residence permanently in Berkeley, Cal. His many friends and correspondents should make note of this fact. The change of residence at this period of life was caused by the hope of benefiting the health of his family.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, November 9, 1887.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. DEFOREST WILLARD read a paper on

FOREIGN BODIES IN THE URETHRA AND BLADDER. REMOVAL BY LITHOLAPAXY EVACUATOR WITH LARGE, STRAIGHT, OPEN-ENDED CANULA.

Unfortunately for the safe extraction of these bodies, the surgeon has to meet with a large amount of deception upon the part of the patient, when the object has been self-introduced, and it is often impossible to obtain any reliable information either as to the presence of the foreign mass or as to its conformation. In broken bougies the surgeon should, if possible, have the other remaining fragment in his hand for measurement, or else secure one of similar size. Any object of peculiar shape should be accurately described, or duplicated. It must be remembered, that while a patient may confess to the introduction of but one body, there may be several. The position in the canal must be thoroughly fixed. In the ante-scrotal region this is easily accomplished, and with the aid of a sound and a finger introduced into the rectum even the posterior urethra can be well examined, provided inflammation be not too severe. When possible, no manipulations should be attempted for extraction without the body being firmly secured from further recedence. Ether is of the greatest value, but cocaine injections may answer for urethral work.

Treatment.—About one-tenth of inserted foreign bodies will be spontaneously expelled, but when the *vis a tergo* of the urine fails to wash out either a calculus or an object inserted through the meatus, the safest and surest plan is to attach to an ordinary litholapaxy evacuator (Bigelow's or other improved pattern) a large, straight tube, which is open at both ends. It contains a movable stylet for ease of introduction. The size should be the largest that the urethra will possibly admit (after nicking the meatus, if necessary), say French No. 29 or 30; American, No 19; English, No 16, for adults; children in proportion. The possibility of the passage of the body through the tube should be determined, if possible, by actual trial, provided a similar piece can be obtained. Rarely will any bougie larger than the above-named size be found in the bladder or urethra. The method has been so satisfactory in my hands, as is proven by the collection of objects before you, that I always resort to it with confidence, to the exclusion of all other primary devices.

If lodgement has occurred in the urethra, the canal must be firmly closed by finger pressure behind the object, while the metallic tube is slid down and carefully caused to engage the catheter or other mass within its calibre, when the bulb of the instrument is slowly compressed until the water has distended the urethra to its fullest limit, thus liberating the body, when suction is suddenly applied while the penis is stretched forward. Unless the mass be firmly caught and imbedded in a pocket, this manœuvre rarely fails after a few trials. The quantity of water that can be contained in the urethra is so small that the body may require two or three efforts to withdraw it the whole length of the instrument. The water should be injected very slowly, but the suction current must be made forcibly. Inspection of the rubber tube can be made through the upper opening without detachment of the catheter. Avoid employing forceps until unsuccessful with the above method, but when necessary to be used, the superiority of the canula again asserts itself. The forceps can be manipulated through its

calibre, and if the object be compressible enough to pass the bore, withdrawal can be accomplished without the slightest injury to the mucous membrane. Objects of larger size than this tube can seldom be withdrawn with safety by any method save cutting. Hairpins can be compressed through the walls of the urethra, and their points passed into the calibre, when they can be completely pushed within the bore and easily withdrawn. Beads, peas, pebbles, etc., will easily enter the canula by suction. Catheters, wires, etc., will usually require the assistance of forceps. Barbed heads of grain can also be ensheathed and withdrawn by this device.

If the object has passed into the bladder, the evacuator becomes an even more essential aid. A straight instrument is not always easy of introduction, but the security gained against subsequent urethral injury abundantly repays for the trouble. If a flexible or spirally cut obturator is used, the introduction is rendered much easier. The tube is used first as a sound to discover the offending body, when the bulb of the evacuator is first slowly compressed, so as not to disturb the fragment. Suction should always be made quickly, so as to draw the body with force. Failing, the water is next ejected with more energy, so as to move the fragment into better line with the calibre, suction being again rapidly applied. If the body is rounded, and of size that can pass the bore, it will in a few moments be found in the bulb. If very long, like a catheter, or pencil, or wire, the chances are not so good that it can be brought into line with the calibre of the tube. As a bougie ordinarily breaks at or near the eye, however, its passage is more than probable. Failing, after ten minutes of gentle trial, a lithotrite should be introduced if the body is a bougie or pencil, and is capable of being cut or pinched in two, and the division made. If the bougie is old and brittle, as is presumptively the case, such division with a lithotrite is easily accomplished. The segments can then be sucked out, and their total length carefully compared with the remaining portion or lost body. Every particle must be secured, lest it form the nucleus of a future calculus. Even the broken jaw of a lithotrite might be drawn into the bore. If the surgeon has not the straight tube with open end, which I advise, he may use the ordinary straight evacuating tube.

Necessarily only a small proportion of introduced objects can be removed per urethram, and I should lay it down as a rule, that any foreign body too large to pass the calibre of this No. 29 tube, unless it be very soft and pliable, should be removed by lithotomy, either perineal or suprapubic. Lithotomy has its dangers, but laceration is worse. Great care must be exercised in the search, if the object be sharp-pointed, lest a perforation be made. The inflation of the rectum, if epicystotomy be done, in order to lift the bladder, must be dispensed with if the object is sharp-pointed. The upper route gives more room, and while there is a slight risk of wounding the peritoneum, yet we must remember also, in the extraction of large objects, as well as calculi, by the perineal route, that the rectovesical fold of the peritoneum is in close proximity to the neck of the bladder, and may not escape involvement in the subsequent inflammatory action.

If the walls of the bladder were only of sufficient strength to warrant their immediate sewing with catgut or silk, and permit primary union under strictly antiseptic dressings, while the urine were drained off below, the suprapubic route would certainly be decidedly the better one; but for the present, we must be content to drain the suprapubic wound.

In the absence of an evacuator, the expulsive force of the urine is often sufficient to dislodge a urethral impaction, especially if the meatus is closed for a moment, so as to obtain the full dilating power of the water. Failing in this effort, if the foreign body can be located and the urethra closed, a large injection of sweet oil may be thrown in, after a hot bath, and the largest possible bougie carried down to the body to stretch the membrane, while pressure from behind is made either by the surgeon's finger or by the expulsive efforts of the patient's bladder.

Should lodgement be made in the fossa navicularis, the spoon of the ordinary pocket-case can often be hooked behind the object and assist in coaxing it forward. A hairpin, or wire doubled upon itself and slightly bent, or a blunt curette, makes also a valuable extractor. An excellent instrument also is the articulated scoop of Leroy d'Etiolles, which, being introduced past the foreign body, has a mechanism by which its tip is then bent at right angles to the shaft, and is capable of making strong but dangerous traction. The abruptly short-beaked sound that I always use for sounding the bas fond of the bladder, can sometimes also be "wormed" past the obstruction, and effect its dislodgement. Long urethral forceps are of great service, as they serve partially to protect the canal during extraction, but they do so far less effectually than does the straight tube before described, which should be placed in every evacuating set. Hunter's or Civiale's three-bladed forceps are occasionally used, but I always look with abhorrence upon dragging any object forcibly through the canal. A dangerous instrument is the urethral lithotrite of Reliquet, as *incision* is infinitely safer for all rough and large bodies. When the substance lies posterior to the triangular ligament, gentle attempts should be made to push it into the bladder, only after the evacuator has failed to dislodge it. If necessary to operate, the raphè should be closely followed, while a large staff is held in position to indicate the location of the obstruction and of the tube.

An incision in front of the scrotum is easily made, and should be closed after the removal of the body by catgut or quilled sutures. Treated antiseptically, and with either a retained catheter, or with frequent catheterizations, immediate union may be confidently expected. The quilled suture gives more perfect rest by its splint action.

If a stricture exists, and the foreign body is lodged behind it, dilatation or free external incision of the stricture should be practised.

For the removal of pin, bonnet pins, or needles, from the urethra, the point can sometimes be im-

bedded in a wax or gum bougie, but it is easier washed out with the evacuator. If immovable, the point can be pushed through the walls of the urethra, and by sharply bending the penis, the head after reversal drawn through the tube by suction or by forceps. It is seldom necessary to cut the pin when this method is used. If a piece of nitrite of silver is lost from a porte-caustique, the evacuator, charged with salt water, should be at once used if the force urination does not expel the mass. Many ingenious devices have been practised in the absence of instruments, to rid the urethra of impacted bodies, but the knife is far safer than rough instrumentation. In the absence of the straight evacuating tube, an extra sized catheter, with open end, and a large syringe, might prove useful.

Blood-clots in the bladder are practically foreign bodies, and are best removed by gentle suction through the curved evacuator, or through the blood catheter, which I here show, the large eye of which is closed down during introduction by a spirally cut obturator.

Catheter accidents are so frequent that instruments should be often examined. Only recently I found that the distal extremity of my much-used pocket case instrument could be slipped from its screw-thread by a very small amount of traction. Old gum bougies should be thrown away as soon as they begin to lose their elasticity.

To summarize:

1. The litholapaxy evacuating tube, large, straight, and with open end, is the surest and safest instrument for the removal of foreign bodies from either urethra or bladder.

2. The fenestrated lithotrite should be employed to break up all bodies capable of division.

3. Incision of urethra or bladder is safer than a tear of the neck of the viscus or of the canal.

4. The suprapubic and median perineal are the safest routes of entrance to the bladder when suction fails.

5. Forceps should be used with the greatest care, and always through a straight tube, which insures protection both to the urethra and neck of the bladder during both exploration and extraction.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, November 7, 1887.

THE PRESIDENT, W. T. BELFIELD, M.D., IN THE CHAIR.

DR. J. A. ROBISON read a paper on

THE TREATMENT OF PERTUSSIS.

He said that since the discovery by Poulet in 1867 of a parasite which is probably the cause of whooping-cough, the disease has been treated by the local application of such germicidal agents as carbolic acid, eucalyptus, boracic acid, sulphur, illuminating gas and resorcin. These had been applied by inhalations, insufflations and sprays; but in many cases it is difficult to get children to allow the administration of the drugs; but he had used with success a solution of cocaine and resorcin in Semple's Atomizing Inhaler, the vapor being so fine that the drug is inhaled into the bronchial tubes without producing any laryngeal spasm. This method of treatment had been successful not only in relieving the cough, but in cutting short the course of the disease.

DR. F. E. WAXHAM: Whooping-cough is a disease for which a great many specifics have been advocated, but I really believe that we possess none. Something over a year ago I remember reading of the fumes of sulphur as being a specific; coming from a high authority, I thought that we had at last found a remedy for this disease, but upon giving it a faithful trial I found it entirely useless, the patients manifesting no relief whatever. And the same may be said of a great many other remedies that have been advocated as specifics. As it is generally conceded that the disease is produced by bacilli found in the mucus of the throat, the larynx and the trachea, and that the peculiar cough is reflex in character, it certainly follows that there are two indications to meet in the treatment of the disease: first, to destroy the bacilli as far as possible by means of germicides, as has been advised in the paper read; and second, to diminish the reflex excitability of the nervous system by the use of sedatives and tonics.

DR. G. C. PAOLI advocated the use of ergot in pertussis. In 15 cases it cut short the duration of the disease.

DR. ROBISON, in closing the discussion, said: I was very anxious to hear from the senior members of the profession in regard to their belief in the pathology of the whooping-cough; because on that depends the treatment. I know it was formerly believed to be almost of a purely nervous origin, or at least of reflex origin, and was treated internally by quinine, belladonna, ergot and opium, and antispasmodics. Of late years it seems to me that it has almost been proven that the disease is of local origin, and it does not seem that we can fully deny the observations of Poulet and Berger that they have found the bacillus of pertussis. I mention the treatment by germicides because all of these observers have noticed that the cough was lessened, the disease shortened and the patients obtained relief by local treatment, no internal medication being given. If that disease is a purely local one, due to bacilli, by the use of antiseptics we remove the cause of the disease and the accompanying nervous symptoms, and relieve the cough. I desire to ascertain the general belief of the profession. Is the disease a purely reflex nervous one, or is it due to the parasitic germs? It is generally considered a self-limited disease. The Japanese call it the one hundred days disease, and probably in three months it will wear itself out, but it seems to me that by the use of these remedies we can shorten it, and are thus doing a benefit to our patients. In regard to the insufflation of boracic acid in the nostrils, I think that is an argument in favor of this local treatment, for boracic acid is a potent antiseptic. Sprays have been used for a long time, but the difficulty is in spraying the lar-

ynx. The use of powders has been in vogue for a long time, but there is a difficulty in carrying out a treatment of insufflation of powder by means of a powder-blower; although when blown through the nostrils there is a fine dust formed which is inhaled into the lungs. Boracic acid acts precisely as carbolic acid that is inhaled.

THE PRESIDENT, DR. CHARLES T. PARKES, reported

A CASE OF NEPHRECTOMY.

(See p. 9.)

DR. D. T. NELSON: I was very much pleased at the doctor's instructions in regard to preparing the patient for these serious operations, and I believe we have considerable to learn in that direction as yet. The method proposed I believe to be valuable in preventing shock. If it is not wandering in a field that does not apply to the paper I would like to throw out another hint, which is that we prepare the alimentary canal previous to these operations; if you choose, make it antiseptic or aseptic by emptying it and subsequently giving antiseptic drugs, preferably naphthalin in 5-grain doses three times a day. I would like to ask Dr. Parkes if, in making the incision, he was careful to preserve the capsule of the kidney and use that in facilitating his drainage? I have had but one case of removal of a carcinomatous kidney. I removed that from the anterior region, not knowing what I was going after. I hoped I had a cyst of the liver of a hydatid form, but on reaching it I found it was the kidney. I opened the capsule of the kidney and preserved that, and after the kidney was enucleated, which was done much more easily than I supposed it would be, I had no difficulty in closing the vessels in the manner the doctor has described. After ligating the pedicle it was dropped into the bottom of the capsule and the walls of the capsule fastened to the wound, and drainage-tubes inserted so that there could be no communication with the peritoneal cavity proper. The result of the operation was very satisfactory and there was a rapid recovery, although signs of the recurrence of the disease are appearing in other tissues.

DR. W. T. BELFIELD: The fatal issue of this case through uræmia emphasizes again the necessity for ascertaining the integrity of the opposite kidney before removing the one under suspicion. This precaution is especially needful in cases of renal tuberculosis, since the second kidney is so often the unexpected subject of this insidious disease. In women the urine from the opposite kidney can be isolated by catheterizing its ureter either through the urethra or—if that fails—through a small incision through the vesico-vaginal septum whereby the orifices of the ureters are rendered accessible. If the urine be thus obtained previous to the operation, and be found normal in quantity and quality, the surgeon can be reasonably confident that nephrectomy will involve no danger of uræmia at least; while, if this precaution be neglected, the greatest care and skill may be vitiated by uræmia through unsuspected disease of the remaining kidney.

It is questionable whether for nephrectomy; or, indeed, all operations upon the kidney, chloroform is not preferable as an anæsthetic to ether. The decided renal irritation caused by the latter may possibly be a considerable factor in provoking uræmia in such cases, where the second kidney is suddenly taxed with an extra burden.

DR. PARKES, in closing the discussion, said: The old incision recommended for exposure of the kidney is an incision made parallel with the last rib, one-half or three-fourths of an inch away, a safe distance away, to enable the surgeon to avoid entering the pleural cavity. With this incision the surgeon has always had a great deal of difficulty in exposing and uncovering the kidney and getting at the blood-vessels. One operator relates that he proceeded all right until he divided the upper half of the pedicle, then the patient bled to death. You can see that the incision here recommended exposes everything to view. If you will experiment on a dead body, with a healthy kidney—trying first the old incision and then this one, you will be convinced of the latter's worth. I am convinced of another thing, that it is a good plan in all cases of pus degeneration of the kidney to open the cavities one after the other, if necessary, for the purpose of diminishing the size of the tumor and also for the purpose of diminishing the congestion around the kidney. The great amount of hæmorrhage that occurs in this operation is from the enucleation of the kidney, and with a small incision it is very difficult to control the bleeding points. I think a great point is gained in every operation by having the work under your fingers.

In reference to Dr. Nelson's question as to whether I cut down on the capsule, I am not positive whether I did or not. I pursued the course which I follow in removing all tumors, to cut down on the tumor and to get as close to it and as far away from the dangerous points as possible. I kept close to the surface of the kidney and away from the peritoneum.

I do not know what would have been gained by Dr. Belfield's suggestion. This patient was secreting urine from the other kidney into the bladder, it was emptied out through the ureter and could be collected and examined just as well as if the ureter had been catheterized. In the first 24 hours the patient passed 7 ounces of urine from the bladder, in the next 24 hours 10 ounces, and so on up to the time of the occurrence of the unfortunate symptoms to which I have referred. The largest amount passed was 17.3 ounces in 24 hours. Up to that time there was nothing in the appearance of the patient that would make one think she was not going to recover. All at once the change and the end came.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, October 6, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D., IN THE CHAIR.

DR. JOS. TABER JOHNSON presented a case of

DERMOID CYST WEIGHING 50 LBS.

Mrs. P., white, æt. 32, mother of nine living children, and has had three miscarriages, the last one

about two years ago. First noticed an enlargement of the abdomen six months ago and thought she was pregnant; could distinctly feel a hard mass, which was taken for some portion of the child's body. As this mass was movable, she felt more certain of pregnancy. I saw her at the request of her physician, Dr. W. P. C. Hazen, last June. I was not certain of a diagnosis, and as the growth was not large, and her health being perfect, I advised delay. I saw her again in August. She was still positive that she was pregnant, and as the weather was very hot and her health very good, I still advised delay. I was certain of the presence of a cyst but was uncertain about pregnancy, of which I saw no symptoms. She constantly asserted that she felt exactly as she had when pregnant, and declared that she felt fœtal movements.

I saw her again on September 7. The enlargement had been very rapid; she seemed to have doubled in size since I last saw her. She gave up all idea of pregnancy at this time and was anxious for an operation. I examined the uterus for the first time now with a sound, and found it empty and only 3 inches in depth. September 20 was fixed for operation. On the 18th she went to Providence Hospital. Two weeks ago to-day I opened the abdomen in the presence of Drs. Hazen, M. F. Cuthbert, S. S. Adams, Fairfax of Alexandria and others. The tumor was unusually adherent over the anterior surface; the adhesions seemed recent and broke down readily. About three bucketsful of fluid were drawn off and the sac removed in the usual way. Masses of hair blocked up the canula so as to cause the fluid to flow down the sac and around it. Dr. Cutts (H. M.) skilfully compressed the abdominal walls so as to prevent the entrance into the cavity.

The patient made an uninterrupted recovery up to the third day, when she suddenly developed a temp. of 102°. It returned to normal the next day, but the next evening she had much indigestion and the temp. was again 102°. Her pulse but 96. This evening at 6 o'clock (October 5), temp. 101° pulse 84. I find, after repeated inquiry, that three days ago she ate quite heartily of lemon pie, and I think her prompt trouble is attributable to this indiscretion in diet, but I am somewhat anxious about her.

Dr. Johnson also presented

OVARIES AND TUBES, CYSTIC AND ADHERENT.

Miss M., æt. 28, single. Has been a sufferer at her menstrual periods since puberty; on three occasions has had convulsions accompanying her painful menstruation. Her life the last few years has been a burden. Has had little enjoyment, as any excess in the way of excitement or fatigue increased her pain. She was usually compelled to remain in bed a week and sometimes longer at every period. Since the 10th of July last had been confined to her room with what appears to me to have been an attack of pelvic peritonitis. She has been under treatment for a very long time. She did not get better, and was certainly growing worse. She was brought to me at the Providence Hospital by Dr. H. E. Leach, who had treated her constantly for the last two years.

She begged for some operation which would remove her pain. She jumped at the suggestion of Battey's operation. Indeed, she knew all about it. Dr. Leach had explained to her the nature and effects of the removal of the uterine appendages, and she came to the hospital with the approval of her family, expressly to have them removed if the suggestion of her physician was approved.

I examined her carefully and could find very little evidence of disease except great tenderness, and said I did not approve of the operation, but requested her to write out a brief history of her case. As a result of my exploration she was confined to bed for nearly a week. So great was her pain that poultices, iodine, hot water and morphine had to be plentifully used to arrest it. After reading her letter and a consultation with Dr. Leach, and a full explanation of the risks and effects to the patient, I agreed to make an exploratory incision, and if no trouble was found in the ovaries or tubes I should decline to remove them and would close the incision. This was agreed to, and a week ago last Tuesday I opened the abdomen in the presence of Drs. Leach, M. F. Cuthbert, Tyler, M. Bruckheimer and others.

I found the ovaries imbedded in a mass of adhesions, and cystic. I thought they had been so much damaged by the manipulation necessary to their liberation that it appeared the wiser course to take them out. The gentlemen present all appeared to be of the same opinion. I don't know that they are very much diseased, but I believe they were the cause of all her pain, and that she suffered from many attacks of circumscribed peritonitis which caused the numerous adhesions found; and I don't know any other way to cure such cases. I believe she will now be a healthy and happy woman, and if her menopause is produced that she will be free from her monthly recurring week of agony. I know that she is delighted that they are out, and is entirely satisfied and fully understands what has been done and its effects. She has had no rise of pulse or temp., has taken no medicine, and feels well enough to-day to get up and walk.

Dr. Johnson also reported a case of

COLPO-HYSTERECTOMY FOR CANCER.

Mrs. R., white, æt. 47, married, mother of five children. Had one miscarriage fourteen years ago, since which time she has not been pregnant. She menstruated regularly and normally until sixteen months ago, when she missed her period and supposed the change of life had occurred. Two months later began to have a profuse flow which has continued ever since without much intermission. She could not feel certain which was hæmorrhage. Some of the time the flow was of a brownish color, watery and had a bad odor; shreds of tissue passed also. The first examination was made by Dr. Birdsall in Alexandria about three weeks ago, when, upon consultation with Drs. Smith and Fairfax, it was decided to be epithelioma of the cervix extending up into the body of the uterus. I was requested to see her by these gentlemen, and did so two weeks ago to-day. I agreed with them as to the nature of the case, and

also that the sooner all the cancerous tissue was removed the better, even if it involved the extirpation of the entire uterus.

The patient and her family were ready and anxious, and September 29 was fixed as the date for its performance. I hoped to be able to stop short of the removal of the whole organ, and spent at least half an hour in efforts to that end. We all felt that the total extirpation of the uterus offered the patient the best chance of recovering, as all the disease could not be gotten away without doing nearly as much violence as the removal of the uterus itself. From the time the patient began to take ether, which was skilfully given by Dr. H. E. Leach, until she was put back to bed, two hours had passed. None of the cut tissues were sewed together; a rubber drainage-tube was put in and vagina tamponed with iodoform gauze. The patient is now in her seventh day, with a pulse and temp. of about 100°. She has had no pain except in her bladder, which was probably irritated by the catheter during the operation. Tampon and drainage-tube were removed on the morning of the third day. The discharge has been very slight and, with the exception of two or three days, free from odor. She is now feeling well, takes much nourishment and appears to have a very fair prospect to get well; at least from the operation. Whether the cancer will return time will show.

DR. KLEINSCHMIDT thought that the theory best accounting for the presence of dermoid cysts was the one ascribing their origin to misplaced parts or cells of the ectoderm in the process of folding in of the primitive layers composing the area germinativa. These cells from the ectoderm retained their power of producing those structures which we know to be derived from the external integument, viz.: hair and teeth. A similar explanation could be offered for the production of other heterologous structures, *e. g.*, the formation of bone in nerve tissue, as illustrated by a case presented here by Dr. Lamb, where bony plates were found in the medulla oblongata. In the latter case portions of the osseous lamella of the mesoderm had, according to this theory, become misplaced among the cells of the ectoderm, which, as we know, produces in the course of development the central nervous system as well as the external integument. He thought this the theory accepted by most modern authorities in preference to the older explanation of "fœtus in fœtu."

DR. REYBURN: Dr. Kleinschmidt's explanation is undoubtedly the correct one. In the male, teeth, hair and even bone have been found in unusual places, which can only be accounted for by the obliteration or perversion of the developmental process. He had a case about fifteen years ago. The girl was very much enlarged, and was willing to run the risks of an operation to protect her chastity. Unfortunately she died. The cyst contained bone, hair and teeth. He reported the case and it gave rise to an animated discussion. Many of the members thought it a mal-pregnancy.

DR. SCHÆFFER: The theory of such growths is of great interest. These cysts are marvels in pathology. The first case he saw made an impression on him. It contained jet-black hair, over a foot in length, and teeth. They are very rare. Certain points in the theory mentioned by Dr. Kleinschmidt seem to conflict. It is not surprising to find these abnormalities in the male. Monstrosities are found in all kingdoms. He could recall an instance in which one fœtus was partly buried in the abdomen of the other, as if it had turned a summerset. Abnormalities are not infrequently met with in twin pregnancies; one grows to maturity and the other remains undeveloped or takes on some unusual development. Bone is not of the ectoderm or outer layer of the embryo, so how will Dr. Kleinschmidt account for it in these tumors?

DR. KING: There is a decided difference of opinion between Drs. Schæffer and Kleinschmidt. Dr. Schæffer considers such growths degenerate in character, and Dr. Kleinschmidt a part of the woman's fœtal development. A part of the ectoderm remains and later in life develops into hair, etc. He has not studied the development of the generative organs very closely, so does not remember any fold that forms those organs. Such growths are easily explainable on the theory mentioned by Dr. Kleinschmidt.

DR. SCHÆFFER: Can we find hair elsewhere? Yes. Then it must be due to misplaced cells. Bone, teeth and hair remain after all else has been absorbed.

The discussion of Battey's operation was postponed till the next meeting.

(To be concluded.)

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

Regular Meeting, November 9, 1887.

DR. V. Y. BOWDITCH, IN THE CHAIR.

DR. F. O. OTIS read a paper entitled,

HINTS TO PHYSICIANS SENDING THEIR PATIENTS TO COLORADO.

From a somewhat careful consideration given to the numerous health resorts throughout the world, and a personal acquaintance with some of them, I am prepared to say that I know of none possessing so nearly a perfect climate for many cases of phthisis, taking it all in all, as that of Colorado; or so nearly fulfilling the conditions necessary for the most successful climatic treatment. "Climatic treatment," says Lindsay, "aims at removing the patient from a climate which induces an indoor and sedentary life to one where an outdoor life of healthful activity may be continuously enjoyed, without hindrance from meteorological conditions. Climatic treatment aims at removing the patient from a comparatively sunless and depressing climate, which impairs vitality and lowers nutrition, to a sunny and tonic climate where appetite, digestion, and sanguification undergo such augmentation as may enable the patient to shake off or hold at bay the tendency to consumptive disease." All this, I believe does the Colorado climate.

Having spent the last summer in Colorado, I was there long enough, perhaps, to appreciate the many bits of knowledge necessary and useful for the newcomer, and not too long to forget or overlook them. When the physician says "go to Colorado," he may not realize that the State is nearly as large as New England and the State of New York together, or larger than England, Scotland, and Wales; and he must, therefore, give his patient more specific directions than these. Generally, however, the physician means Colorado Springs, for there the larger number of invalids or "lungers," as they facetiously call themselves there, go; and undoubtedly this town is better prepared to care for the consumptives than most others in Colorado, for it is not an inconsiderable source of revenue to the inhabitants. Scattering cases go to Cañon City, Denver, Salida, Boulder, and other places, but, with the exception of Denver, the accommodations are probably far better in Colorado Springs, if one is able to pay for them. Some, mostly young men, go out on a ranch, if they are strong enough to endure the hardships and privations consequent upon such a life; but they must be prepared for poor food, and much of it is canned. Wherever the patient goes, the physician under whose care he comes—and he should be under the observation of some medical man—should be informed by the home physician of the history and condition of the patient. Better is it if the new physician is personally known by the one at home. Moreover, the former will render great assistance to the recently arrived invalid by advising him as to boarding places of good repute, and in wholesome localities, and, indeed, in a thousand other ways.

The majority of consumptives go to Colorado Springs, a town of 7000, or more, inhabitants, with the purest of drinking water from the melting snows of Pike's Peak. The physicians, nearly all of whom are there perforce, on account of pulmonary trouble, are men of ability and skill. There is no system of sewerage as yet, but one is in contemplation, and, I should say, was much needed. The boarding houses are many and for the most part seem to offer good accommodations, the average price of board and lodging being from twelve to fifteen dollars a week. What the physicians there advise, and which obviously is the best plan, is housekeeping, if the invalid is strong enough and is with friends; but rents are high. There is a good hotel, the "Antlers," where the new comer will spend his first few days until he has selected his permanent quarters. The character of the society is much like that of a summer resort, quite cosmopolitan, as one would naturally expect from the coming together of people from so many different parts of the country. The daily life of the invalid is essentially an out door one, which is very possible when one considers that there are only thirty-five to forty-six cloudy days in the whole year, and from "October 1st to April 1st there is an average of less than one-half a day of each week when the patient will be deprived of sunshine." During the winter there is practically no rain, and one can sit on the veranda or be in the saddle every day; the day of sunshine during this season being about eight hours. For some time after coming to this altitude (Colorado Springs being 6080 feet high), comparative rest and inactivity is enjoined, and probably with wisdom; but sometimes it seemed to me that this injunction was carried to an extreme, and that moderate exercise would have hastened the improvement or recovery. Horseback riding is the exercise *par excellence* at Colorado Springs, as elsewhere in the State, and horses are good and comparatively cheap. The rides are innumerable. Out on the plains; to the various Cañons; to Manitou; the Garden of the Gods, etc.

It seemed to me that there was no very great opportunity for one to find remunerative employment in Colorado Springs, for it is not commercially active. Probably some of the other and more busy towns would serve better for this purpose. My impression of Colorado in general, however, is that a man of sufficient strength, with energy and adaptability, who desires self-supporting work, will not be long in finding it. As an illustration of this, I know a young clerk from this city who went to Colorado Springs for pulmonary trouble, but who was strong enough to be about and around after a little. At the Springs he found a cattle-man who took him into his employ and sent him up into Estes Park to look after his cattle. He got the use of a good horse, and was paid a fair monthly salary, together with his board. Possessing Yankee shrewdness he found an opportunity to preëmpt a quarter-section of grazing land at the same time, and now he bids fair to regain his health and have some dollars in his pocket at the end.

In summer Colorado Springs, judging from my experience, is likely to have many uncomfortably hot days, and it seems to be well for the invalid to seek the coolness of the mountain somewhere and, moreover, it makes a pleasant and agreeable change after a winter spent in civilization, with its consequent and inevitable evils, to have something of the wild and free life of the mountains. There are many of the so-called mountain parks, near or more distant, and ranging in altitude from 7,000 to 10,000 feet high, which offer both a cool temperature and all the attractions of grand mountain scenery. One finds hotels in some, in others boarding ranches, and in more remote places he must go prepared to camp out. In all the food will be found more or less bad, depending upon the distance from any source of supplies, but unless very delicate, the invalid will soon learn to put up with it and will have such an appetite from the life and invigorating air that he can sit down and eat a piece of raw ham. If one enjoys it and is strong enough for long trips on horseback, he can start on his horse from Colorado Springs, or Denver, and ride to the mountains and have his horse there for use. For those who are delicate and need moderately comfortable quarters and care, there is Manitou Park, Idaho Springs, Salida, and Poncha Springs, near by. Georgetown, a typical mountain village, most picturesquely located in a deep, narrow gulch, on Clear Creek Cañon, and Estes Park, one of the most charming spots in all Colorado, and of which I shall speak a little more at length. It is one of the smallest of the Colorado parks, and is about

ten miles square and 7,500 feet, about, above sea-level. It is reached, from Denver, by railroad to Lyons or Loveland, and from thence by a stage road of twenty odd miles. The journey is made in a day from Denver. There are but few buildings and settlements in the park, the most of it being owned by the so-called English company. Some years ago the Earl of Dunraven visited the place and was so much impressed with its beauty that he got possession of it. There is a small hotel there of moderate price, and three or four boarding ranches. Ferguson's and James's are the best, at which room and board can be obtained for about twelve dollars a week. Each of these ranches consists of a number of small cabins of two or three rooms, some of logs and others of rough boards, but one is very comfortable in them, and he is, or should be only in them to sleep. The food is fair for the mountains, about the same quality as in the Adirondacks. It seems paradoxical that beef should be of poor quality, when all around are herds of cattle preparing for the Chicago market. One has, however, every day, an abundance of the most delicious brook trout.

One of the great charms of the park is the nearness of the mountains. On two sides are the great snowy ranges terminating in Long's peak, 14,272 feet high, the "Matterhorn of the Rockies." The air is of the purest, and almost every day is a sunny one. Very rarely is it uncomfortably hot, and the nights are always cool. Generally a fire is comfortable. But once during a stay of six weeks there did I notice any dew, and one can sleep under the open sky without danger from dampness. Many spend the summer in tents, which dot the park over, but most of the cabins have chinks and cracks enough in them to let in sufficient air. The flora is large and luxurious and the botanist will find continual surprises and delights in it. Indeed I do not see how it is possible to find a clearer or more invigorating air, sunnier or bluer skies, grander or more beautiful scenery in the whole Rocky Mountains than here in Estes Park. I have known of a consumptive getting up from her bed in Colorado Springs to go to the park, and in a short time after her arrival there riding horseback. The winter is not uncomfortable there, I am told, or very cold and so far as climate is concerned one could well live the entire year there if he could endure the loneliness. Indeed it would be to me infinitely preferable to a winter among the snows and ice of the Adirondacks; and if a mountain health resort of such perfect climate existed anywhere in Europe, Davos would be deserted. If one has passed the winter at Colorado Springs I would advise them to go to Estes Park about the middle of June, when occasional hot days come at the former place, and remain until the first of October. If one rides horseback—and half the pleasure of the park is gone if he does not—it is the cheapest way to take your saddle with you and buy a pony there, which one can do for forty dollars and upwards. There is a mail once a day, but no telegraph. Comparing my experience of the climate of Estes Park with that of the Adirondacks, I should say that it was rather warmer in the former place, far dryer, and much more sunny. One feels the same invigorating influence in both places. The night temperature is about the same, I should think, in both places.

In winter or spring either at Colorado Springs or elsewhere in the State, there are occasional high winds—"wind storms" they call them—accompanied with clouds of dust, which may produce an irritating and injurious effect upon those whose pulmonary trouble is accompanied with much secretion and who have sensitive throats. It may be a question whether it is best for them to remain in consequence of this. The damper, but more quiet and soothing atmosphere of Southern California or the South may serve them better, which is again an illustration of the fact that no one climate suits every case of phthisis.

The best time to go to Colorado is probably in September or October—most delightful months there. The best time to come East for a visit, I should think, would be either in May, June, or October. The best way to go from Boston is, in my opinion, by the New York Central and Lake Shore Railroads to Chicago, and from the latter city to Denver by the Chicago, Burlington and Quincy Railroad. By this means there is but one change from Boston to Denver.

Clothing.—One should have as thick winter clothing in Colorado as in this climate, for the mornings and nights are often very cold. In the sleeping room, moreover, one must make sure that the floor is tight and covered with a warm carpet. A fire should be made in the morning before the invalid arises.

Expense.—It is expensive both going to and living in Colorado. The cost of the journey there is from seventy-five to one hundred dollars; and board in Colorado Springs, as I have said, is from twelve to fifteen dollars a week. Rent of cottages is from fifty dollars upwards. About the only thing that is cheap is horse-hire.

Effect from the Altitude.—Some patients think it wise to make the ascent from the Missouri river to Denver gradually, so as to become accustomed to the altitude. The majority, however, I think, go at once to the altitude at which they are to live, and generally, so far as I can learn, experience no especial discomfort or harm from doing so. For about ten weeks I lived at an altitude of from 6,500 to 7,500 feet or more, and climbed mountains, three of which were over 14,000 feet high, without experiencing the slightest discomfort. Nor, indeed, was I in any way unusually affected, except, perhaps, on three occasions. Twice when on high mountains I had a slight headache, and the third time when at Leadville, which is over 10,000 feet high, nearly to timberline, it seemed to me that in walking I got out of breath more quickly than usual. I have climbed high mountains with one of affected lungs, who seemed to endure the exertion and altitude about as well as I. A curious effect of the altitude was noticed by a physician in his own case. When about 10,000 feet high, at which altitude he generally lived, the fever that accompanied his pulmonary trouble was kept in abeyance. When, however, he descended to a lower level it recurred, or increased in severity.

Length of Residence.—In whatever climate one finds his lung trouble improving steadily, there he should remain, not only until all signs of mischief disappear, but, in many cases at least, as long as he lives. I feel convinced that this is the safest and wisest plan, and I think that physicians of experience are gradually growing to this opinion. This is especially true of the Colorado climate, which is such a radical change from the one the patient is likely to come from. I believe the slow improvement, or lack of any improvement, in many cases is due, partly at least, to the worry over the enforced exile, and eager watching for the time when they think they will be able to return to their homes. It is often noticeable how quickly and permanently those improve and recover who take up their residence in Colorado, and settle down to permanent llving there, with their friends and family about them. The contrary is also observed with those who make it a mere health resort, and are separated from their family and friends. As, for instance, a wife from her husband, or a daughter from the rest of her family.

Dr. F. I. Knight: There is a point that ought properly to come up, although Dr. Otis did not notice it in his paper. I think a warning ought to be given, whenever the subject comes up for consideration, at any rate when it is presented to those who are not familiar with the subject, in regard to the cases which are to be excluded from that climate. It is too much the fashion, when a climate becomes popular for the relief of any disease, for all patients with that disease to be hustled off there. And this is just as much a mistake as it is for every case of pneumonia to be treated with the same drug. It is very much like the treatment of disease with a little book of symptoms.

There are certain kinds of consumption that will die very much quicker in Colorado than they would if they stayed at home, and it is certainly very much wiser for a physician, unless he has considered his case for a long time, and perhaps has counsel upon it, to keep at home cases of very advanced disease; also, to keep out of that climate cases attended with a good deal of fever, and very possibly, also, those cases of a highly wrought nervous temperament. To be sure some of those latter cases do well in Colorado, and some even of the advances cases.

One case I have in mind, which was taken out there without my consent, and not exactly against my remonstrance, which after a long time did do well, although it was a case of very advanced phthisis. As a rule, it is very much safer not to be in haste, at any rate, to send these cases to a high altitude. It certainly has been my experience, and I have had cases of pulmonary disease treated in almost every climate in the world, that the cases of lung disease that are free from fever, and where there is tolerable strength and constitution to start on, do far better in a climate of that kind, a high mountain climate, than in any other; and I think that all climatologists are fast coming to that opinion. In the cases of very advanced disease, in those cases particularly where there is a good deal of febrile disturbance, it is possible that after a time, after the activity of the disease has been mitigated at home, that patients may be removed there with safety; and this is a thing for consideration.

There is another point which we must also bear in mind, which must be urged upon the minds of men, that in regard to it they may not act hastily, and that is, in sending poor patients off there with the idea that the climate is going to do everything for them. As a rule, if a man has extensive disease of the lungs, and is going to work for a living, he had better be advised to save his money and stay at home. He had better do as well as he can among his friends, and not waste the little that he has accumulated in a change of climate, for his money will go in a very short time out there, and he will be left stranded and unable to work. It is a great pity, it seems to me, to send off, as some physicians seem to be in the habit of doing, every case of pulmonary disease, without regard to their circumstances. Almost every day cases come to me who have been urged to go to Colorado or California, or New Mexico, patients who have perhaps accumulated a few hundred dollars, which is all they have in the world, and they are advised to make a change of climate on account of lung disease. They would be left stranded. I should say that unless the patient had very little disease, and it was perfectly clear that he was able to work, and certainly it is not so with the most of these cases, they would better be advised to stay at home, unless they have means of living a considerable time without any active work.

Dr. Albert N. Blodgett: I had an opportunity, some years ago, of investigating the climate of Colorado, although not so extensively as Dr. Otis has done, and I was struck by one or two things that have been mentioned, and some that have not been alluded to. In the first place, the distance is so great, that many patients who start in fairly good condition are very greatly fatigued by the journey. Under any circumstances it is extremely taxing for an invalid. The journey is a long one, and I think that, with ordinary expedition, a week would be thus consumed. I have seen patients who, from fatigue, have seemed to die sooner there than they would have done if they had remained at home. I have supposed that cases in an acute stage of pulmonary phthisis should not be sent to that climate. I think the abruptness with which the change should be made, and the high altitude reached, for persons whose pulmonary structures have been invaded by phthisical disease, is a question that should have more consideration than is usually given it. I have seen healthy persons suffer from shortness of breath on arriving in Colorado to such a degree as to make any sort of exercise burdensome for some days. I have seen others, in Switzerland, who have had a "rush of blood to the head," in an altitude as high as Colorado Springs, which was relieved by frequent nose-bleeds. I have seen the same thing in Colorado. Perhaps it would be better to break the journey for the sake of lessening the fatigue, and also in the hope of accustoming the pulmonary structures which are already diseased, to the rarer air, rather than to make a hasty journey, and per-

haps put a feeble patient in a less favorable condition for improvement than he would be in with a little more attention to this precaution. I can certainly verify everything that has been said, so far as my experience will go, in regard to the wonderful climate which is found in this part of our country. I had an opportunity of seeing a part of Colorado, although it was a very small part, located in the vicinity of Denver and Colorado Springs, and the parts between, and I never saw anything like the clearness of the air in this region. The exhilaration is something remarkable — certainly in a healthy person—and I have no doubt it would be the same, to a certain degree, in a sick person.

I cannot help thinking that the climate of Colorado is the nearest to a typical climate for consumptives which we know anything about; but I believe that far greater care is requisite in the selection of cases, and far more caution in changing to that climate than has heretofore been observed.

Two years ago I made a pretty careful study of the Appalachian range in Georgia. I believe there are certain of the Alleghany ranges which ought to be taken into consideration in sending patients from our own vicinity. There is the change in life, the distance in reference to diminished expense, and the expense of living after one is there. In the western sections there are a great many places where one may live profitably by making it a home for investment. So far as elevation is concerned, there are valleys in certain sections up to 2,000 or 3,000 feet. This is inconsiderable in comparison with Colorado, but very considerable in comparison with other elevations. Eight-tenths is still primeval forest, which equalizes temperature.

It is not as dry a climate as Colorado. The rain fall is probably not less than in New England, though it is placed on the maps as being dryer than any other section—than the Colorado ranges. I saw a number of invalids who felt sure that they could not live on our sea coast border, men who had cavities and had had hæmorrhages, and who were in pretty fair health. I have, myself, sent forty or fifty patients to this section, and, although they have different results, in the main it is as satisfactory as double that number of cases who have gone to Colorado. Ample board can be obtained with half the money. The expense of going is less than half, and sometimes a distinct advantage is gained in the fact of the invalid being much nearer home. The air there is as pure as can be found in any part of the world. The mountain tops are covered with snow three or four months, the valleys only three or four days at a time. The locomotion is on horseback *par excellence.* Every other way is uncomfortable in the extreme.

DR. R. W. GREENLEAF: There are one or two medical questions relating to it in which I differ from what Dr. Otis has said. First, in regard to whether the patients who are sent there ought to go right about their exercise or not. It seems to me that it would be far wiser for them to remain at rest for some days. A well person is quite fatigued by the altitude, even in such a place as Colorado Springs. I was perfectly well all the time I was there, but even a half-mile fatigued me for some days; after that I could walk indefinitely as at home. Instead of remaining in Colorado Springs or in the towns, where there are all the drawbacks of dust and residence in cities, why is it not wiser to advise the patients, if they can afford it, to go into the mountain regions and be in camp all the time? To be sure, some things are hard, but they can be lightened in many ways. Changes of heat and cold are very noticeable. It was very warm at midday, and the water was almost frozen at night. It seems to me that it is far wiser for the patient to go into the mountains as soon as they are strong enough to undergo such extremes, so that they could be out of doors all the time. I was very glad to hear what was said about the selection of cases, for I met many cases who were coming back simply to die. It seems to me that it is a mistake to send other than select cases.

DR. OTIS: I did say that comparative rest is enjoined, and probably is essential. I did not mean to say that I believe in activity as soon as the patient arrives in Colorado Springs. It seemed to me that some of the patients, after they had been there a year, were sitting about on the veranda when it did seem as if they would do better if they moved. In regard to the patient going at once into the mountains, the practical difficulty is that you cannot get good food. Unless he is pretty well and strong, the patient could not endure it. I don't quite agree with what Dr. Knight said about poor people going out there. It seems to me it makes a difference what sort of a person it is. I remember one poor young man with no money, a clerk in a store. His employer gave him a present of fifty dollars, and he went out there. He had serious trouble with his lungs, and was told to keep still. He got a horse and rode about, and soon made friends with a cattleman who employed him and paid him a fair monthly salary, and he seems getting on well. I remember another instance of a young man who had money enough to stay awhile, and found employment. He finally bought his employer out. I think it depends on the kind of man that goes.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Apparatus for Purifying the Air of Rooms of Phthisical Patients — Nervous Predisposition in the Etiology of Facial Paralysis—Therapy of Chronic Metritis—A New Truss.

At one of the last meetings of the Academy of Sciences, Dr. Brown-Séquard presented an apparatus invented by M. d'Arsonval, the object of which is to purify the air of a room occupied by phthisical patients. This apparatus is bell-shaped and placed at the head of the bed, under which the patient breathes. It is so arranged as to be in constant communication, by the aid of a tube, with a chimney

which is heated by gas, a candle, or a lamp. The chimney, which also communicates by a tube with the external air, draws to it all the air that escapes from the lungs of the patient and is expelled outside. so that it does not mix up with the atmosphere of the room. This subject was discussed at the last meeting of the Société de Biologie, when some of the members present did not see any great advantage that the apparatus described above had over keeping the windows constantly open for the renewal of the air. Moreover, Dr. Strauss, while admitting the inconveniences that may result from breathing confined air, observes that the expired air of phthisical patients does not contain microbes. Tyndall has shown that this air was optically pure; it contained neither microbes nor solid particles. Prof. Grancher declared that he had never been able to discover the presence of a single bacillus in the air expired by his phthisical patients. M. Charin arrived at the same results. Consequently, the conclusion was that, as regards microbes exclusively there is no inconvenience whatever to breathe the air expired by phthisical patients.

This certainly does not accord with the experience of the majority of physicians, and Dr. Brown Séquard, in responding to the above remarks, observed that it is well known that phthisis commits greater ravages in the cities than in the country, and, generally speaking, in all places where the population is dense and conglomerated. In prisons the mortality from phthisis is considerable. It has been remarked also that soldiers affected with tuberculosis enjoy better health when they are out in the camp than when they are confined to their barracks. All these considerations, the speaker added, demonstrated the dangers of breathing confined air, and that allowing abstraction for microbes, as this air certainly contains other principles injurious to the health.

In an interesting article on the part played by nervous predisposition in the etiology of facial paralysis, published in the *Archives de Neurologie*, Dr. E. Neumann observes that, when an individual is affected with facial paralysis, the hemiplegia cannot be referred to an organic lesion, one is disposed to accuse the cold, and to impute the malady to its depressing influence on the body, and hence the reason why the affix "à frigore" is sometimes applied to it. Such, however, is not the opinion of the author, and, founding his observations on numerous clinical facts, Dr. Neumann thinks that neither the cooling of the body nor the nervous derangement can suffice of themselves to determine, in any person not predisposed, paralysis of the face. These circumstances are only accessory factors which play the rôle of provoking agents the efficacy of which would doubtless be *nil* if they did not find a soil prepared in advance. The preponderating part in the etiology of paralysis of the seventh pair of nerves must be ascribed to hereditary nervous predisposition. When a physician finds himself in the presence of a subject affected with facial paralysis manifesting itself independently of any appreciable organic lesion, he should make an inquiry into the family antecedents as well as into the personal antecedents of the patient, which will disclose an hereditary nervous condition without which all the determinant causes would be absolutely powerless to provoke a hemiplegia of the face. In conclusion, Dr. Neumann suggests that rheumatic facial paralysis should be definitively removed from the category of maladies included under the term "*à frigore*," to be enrolled among the other maladies of the nervous system, and to take its place in the great neuro-pathological family to which it belongs by its origin.

In his lectures on the *Therapeutics of Chronic Metritis* at the Lourcine Hospital, Dr. Martineau endeavored to show that the treatment of metritis is not single, as it was said to be by the older gynecologists; that this disease did not rest on one lesion only, and that it did not suffice to cure this lesion to declare that the uterine inflammation which gives rise to the lesion is cured. The curability of metritis is possible only on the condition of treating the general malady, constitutional or diathetic, on which it depends. The author has thus removed the treatment of metritis from the narrow limits of anatomical and symptomatic localization.

At a recent meeting of the Société de Chirurgie Dr. Lucas-Championnière exhibited a new truss of his invention for patients who have been operated on for hernia. It consists of a simple elastic band with a pad, which is placed above the cicatrix and not on it, as is generally done. A. B.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Pathology and Treatment of Diphtheria—Sarcoma in Bone.

At the last meeting of the County Medical Association Dr. J. Lewis Smith read a paper on *Present Opintons Regarding the Pathology and Treatment of Diphtheria.* He said that while the investigations concerning the etiology of the disease had clearly established its microbic origin, the microbe which was its specific principle had not been positively demonstrated; and he then went on to speak at some length of the bacillus observed by Loeffler and described by Klebs in 1883, cultures of which to the twenty-fifth generation, inoculated in guinea-pigs and birds, produced a whitish exudation at the point of inoculation. The investigations into the microbic origin of diphtheria lend considerable support to the theory that it is primarily a local disease, and that in certain mild cases it never becomes constitutional, or is constitutional only in a very feeble degree. Nevertheless, those who believed that diphtheria was primarily constitutional based their opinions on facts which presented strong evidence in favor of their view, such as the inoculation period of six or seven days in certain cases, the early occurrence of nephritis (even within 24 hours in malignant cases), and the existence of very severe and often fatal nephritis in certain cases where the disease

of the mucous surface had been so trivial as to be scarcely appreciable. The mooted question as to whether diphtheria is primarily constitutional with local manifestations, or whether its nature in this respect varies in different instances, he thought, therefore, must be considered as still undetermined.

As to the propagation of diphtheria, the statistics of Dr. C. W. Earle, of Chicago, showed that the disease was as severe and fatal in salubrious localities in the newly settled and mountainous States and Territories of the Northwest, when it happened to be introduced, as in the foul air of large cities; though dampness and decomposing animal and vegetable substances in rural localities, as in cities, increased the prevalence of the disease. His statistics also showed that diphtheria may be communicated long distances by railways, and probably by merchandise, and they demonstrated its extreme contagiousness from person to person. In the cities there was abundant and melancholy proof of the causative relation of foul air, whether arising from sewers or from stagnant filth, to the disease, and Dr. Sternberg, in his recent Lomb prize essay, had expressed the opinion (which seemed to be borne out by observations relating to the etiology of diphtheria), that the diphtheritic germ, once deposited in damp and foul places, is probably propagated independently of the sick. Thus, in New York city prior to 1850, although foul sewers and unsanitary conditions existed, there was no diphtheria; but in the decade following 1850 diphtheria was introduced, and its germ made its way into the sewers, where in the filth underground it found a nidus for its propagation; so that now, whenever sewer gas escapes into the domiciles of the city, it is laden with the germs of this disease.

The amazing vitality and power of propagation of the diphtheritic germ are apparent when we reflect that it has permanently infected the filthy-flowing current of the sewers in every part of a great city, sewers which in their ramifications extend for hundreds of miles. It is propagated chiefly by exposure of children to the sewer gas, carrying with it the diphtheritic germ, which exudes from this widely extending underground culture-bed, and to walking cases of diphtheria, often so mild that there is little or no complaint of the throat or impairment of the general health. In Dr. Smith's opinion, the germ of diphtheria is of such a nature, and quickly becomes so established in a sewered city, that it can never be "stamped out," as cholera and yellow fever may be, by the active measures of health boards or by legislative enactments; although these may doubtless do much in the way of protection. He also alluded incidentally to the possible communication of diphtheria to man from animals, and stated that recent investigations went to show that it may be thus communicated from poultry, and especially from pigeons.

In speaking of the area of contagiousness in diphtheria, Dr. Smith said that Dr. Lancey had cited cases to show that this area is limited to a few feet, and that Dumez had stated that in a school in which the boys and girls in the same hall were separated by an open space a few yards wide, diphtheria prevailed among the girls, but did not attack the boys. Other instances were also mentioned showing that the area of contagiousness, like that of scarlet fever, was small, and therefore unlike that of pertussis and measles, which, when they entered a domicile or asylum, usually attacked all the unprotected children. Dr. A. V. Meigs, of Philadelphia, in a paper published last year on the propagation of the common infectious diseases of childhood, placed diphtheria with scarlatina and typhoid fever in one group. Diseases of this group, he said, seemed to be more subject to endemic or local influences than were measles and pertussis, not spreading over wide communities like the latter; and hence, by strict quarantine and preventive measures, their wide extension was more easily prevented. Those who had carefully studied the infectious diseases in children's institutions and elsewhere, Dr. Smith thought, would recognize the truthfulness of this distinction.

In taking up the subject of treatment he remarked that one principal reason why there is such a difference of opinion in regard to the value or remedies was because the disease varies so greatly in severity in different localities and at different times. According to some observations made by Lunin at the Oldenburg Hospital in 1882, turpentine was found to be the most useful agent in the fibrinous form of the disease, and tincture of chloride of iron in the phlegmonous and septic forms. By many physicians bichloride of mercury was at the present time considered the most efficient remedy; but it was necessary to use it with great caution, especially in the form of a spray, or where it was given internally at the same time that the spray was employed. Dr. Smith thought that the quantity of bichloride that could be safely administered to children of various ages was about as follows: To a child of 2 years, 1/6 grain; 4 years, 1/4 grain; 6 years, 1/3 grain; 10 years, 1/2 grain.

He devoted considerable attention to the treatment by turpentine, both internally and in sprays and fumigations, and quoted a number of favorable opinions concerning its use. Thus Schenker employed it internally in doses of from 10 minims to 1 teaspoonful, given from one to three times a day in milk, sugar-water or gruel. At the same time he used it as a spray; and of 36 cases treated in this way, with the use of alcoholic stimulus as required, in addition, 31 recovered. Sigel stated that turpentine, in teaspoonful doses, reduced the temperature in 47 cases, in 14 of which the necessity of tracheotomy was apparently obviated by this remedy. Of the whole number of cases treated by him with turpentine, 87, death occurred in 14.9 per cent.; while in those treated with bichloride of mercury, salicylic acid, potassium chlorate, etc., 32.5 per cent. died.

Among the other agents considered by Dr. Smith were sodium benzoate, bromine, calomel, quinine, copaiba, cubebs, pilocarpin, tincture of chloride of iron and potassium chlorate. He spoke in strong condemnation of the use of pilocarpin (which has been highly lauded by some authorities), on account of the disastrous results liable to be produced by it; stating that he had seen it cause symptoms resembling those in extreme œdema of the lungs. In

speaking of chlorate of potassium he gave the following prescription, which he said had been long and favorably known in New York, and was probably more frequently written, with some variations in its proportions, than any other in diphtheria:

℞. Tinct. ferri chlor..... fʒij–iij.
Potass chlorat..... ʒj.
Acid muriat. dilut..... gtt. x.
Syr. simplicis..... fʒiv.
M.

Dose, 1 tablespoonful every one or two hours.

The tendency, however, had been in late years to diminish the amount of potassium chlorate, or even to omit it altogether, from its known irritating action on the kidneys, which are so prone to inflammation in this disease; and he thought it should no doubt always be omitted if any albumin appeared in the urine.

In conclusion, Dr. Smith spoke of the solvent action of papayotin and trypsin on diphtheritic membrane. Dr. A. Jacobi had met with good results from the latter; employing a mixture of 1 part of papayotin and 2 parts each of glycerin and water. The solvent action of trypsin, like that of lime-water, was increased by using it in connection with an alkali, and he suggested the following formula for a spray:

℞. Sodii benzoat..... ʒj–ij.
Sodii bicarb..... ʒij–iij.
Trypsin..... ʒj.
Ol. eucalypti..... fʒj.
Liq. calcis..... oj.
M.

At the conclusion of Dr. Smith's paper, Dr. C. A. Leale said that in order to overcome the difficulty of feeding the patient so commonly met with after intubation or tracheotomy, he had been in the habit of resorting to a very simple but efficient device, which he thought ought to be more generally known. This was the introduction of a No. 8 velvet-eyed rubber catheter into the stomach by way of the nose, and the injection through it, by means of an ordinary syringe, of any kind of liquid food that was required.

On the same evening Dr. Frederic S. Dennis read a paper on *Selected Cases of Sarcoma in Bone*, which was illustrated by a large number of interesting specimens and microscopic sections. In concluding it he called special attention to the importance of the following points:

1. An early diagnosis. 2. Complete removal of the disease by amputation of the part in which it is situated, and not by enucleation of the tumor. 3. The careful watching and recording of the subsequent history of the case. 4. The recording of all cases of sarcoma in bone coming under observation, together with the microscapic appearances of the growth. 5. In collecting statistics of this disease the discarding of all cases in which the microscopical appearances are not fully recorded. P. B. P.

THE SUDDEN DEATH OF DR. J. E. CHANDLER.

Reply to Dr. H. C. Markham.

Dear Sir:—In THE JOURNAL of Nov. 12, 1887, Dr. H. C. Markham, of Independence, Iowa, reports the melancholy death of a young and accomplished physician, Dr. J. E. Chandler, of Rowley, Iowa, his death having taken place suddenly and almost immediately after the extraction of a tooth. Dr. Markham says: "Some years ago the deceased suffered a *severe rheumatic attack* although *not arthritic in type* (italics mine). For two or three years he has developed heart symptoms, including a mitral systolic murmur." In THE JOURNAL of Dec. 3 Dr. Markham, in his reply to Dr. Babcock, makes further comment upon this unfortunate death; and it is my honest conviction that, when he says death was due to "a fatal faint, and not heart disease," he draws a conclusion not warrantable in this case, when all the known facts are taken into consideration. I therefore beg to differ with Dr. Markham in this instance, with all due courtesy, and with a due regard for his unquestionable professional ability.

Take, if you please, an hypothetical case with a "mitral systolic murmur" indicating but a slight organic lesion of the heart, and in addition to this a certain degree of general debility, and I admit the possibility of death taking place by ventricular overdistension, and during no greater mental excitement and physical exertion than Dr. Chandler probably expended in extracting the lady's tooth. And, further, I am not prepared to deny, in a rare and isolated case, the bare possibility of death occurring under similar mental and physical circumstances where ante-mortem and post-mortem examinations fail to suggest the organic heart lesion. In Dr. Chandler's case, however, I propose to demonstrate the probability, if not the almost certainty, of his "fatal faint" being due to grave and long-continued cardiac disease, the direct sequela or accompaniment of acute inflammatory rheumatism of a severe and protracted type. In other words, the probability "that compensation had been ruptured and grave dilatation established," suggesting that the immediate cause of death was from paralysis from ventricular over-distension, the result of the heart's muscular inability to perform the extra amount of labor instantly demanded to continue the existence of the patient.

At the late meeting of the Buchanan Co. Medical Society, Nov. 17, 1887, at the request of the Society Dr. S. G. Wilson, in the presence of Dr. Markham, gave his remembrance of Dr. Chandler's case, and referred in particular to the severity of the acute inflammatory rheumatism from which Dr. C. suffered. One attack, during his attendance as a student in the Medical Department of the University of Iowa, occasioning his return to Independence, Iowa, at which place the writer of this letter, during a social call and in the presence of Drs. Wilson and Powers, saw the swollen joints of Dr. C. Dr. Wilson remembers the positive establishment of heart-trouble, and is quite sure the murmur developed was considered at the time mitral. Not only this, but he remembers having made the diagnosis of endo- or pericarditis. He made frequent examinations of the heart after the acute symptoms had subsided, and found the endocardial murmur persistent and easily recognized, his last examination of this character

having been made two or three years ago. Now we all know too well the great likelihood of cardiac disease occurring in cases of this character. We also know that in the majority of cases the diseased condition originates in the left side of the heart in that portion of the endocardial membrane entering into the structure of the mitral valve, and that, again, the majority of mitral lesions revert back to inflammatory rheumatism. Suppose Dr. Wilson had entirely failed to remember his location of the endocardial murmur when last examined two or three years ago, and we have remaining his positive assertion of recognized cardiac disease at that date; and this, taken into consideration with the fact that in a large majority of cases it would, under similar circumstances, be mitral, establishes a very probable diagnosis, the prior presence of inflammatory rheumatism being beyond question. This was two or three years ago; and in the absence of further examinations, we are justified in suggesting the possible implication of other regions of heart, perhaps of the aortic valves. And to increase the probability, permit the suggestion that Dr. Wilson's superior qualifications, characteristic caution, and thoroughness, render his statements peculiarly reliable. I look upon it as an illogical deduction to consider Dr. Chandler's one of those rare and phenomenal cases above referred to, in the face of unimpeachable testimony showing that he suffered from acute inflammatory rheumatism, followed or accompanied by endo- or pericarditis, and the establishment, from this cause, of valvular lesion, the natural and ordinary result of which is hypertrophy and dilatation, in which latter condition his "fatal faint," although not a frequent occurrence, is readily accounted for. Dr. Markham treated him for debility, functional impairment of the liver, nausea, and loss of appetite.

As Dr. Babcock says, "It is not uncommon for patients with heart disease to refer their symptoms to some other organ than the one affected. Further more, the Doctor was an energetic man, very likely to perform his daily duties without complaint; hence it is reasonable to assume that his condition was far graver than he himself would admit or others recognize." Dr. Markham failed to have his suspicions aroused and examine the heart. Yes, the writer of this letter has in his mind a remarkably distinct remembrance of a case located by himself as an attack of malignant malaria, the patient having a "close call," but making a brilliant recovery. There is but little doubt but that it was a case of "femoral hernia." At a time when malaria was in almost every household, overworked, hurried, and in the absence of certain prominent symptoms, I made this blunder. I failed to examine the important region. "I feel that it was good for me to have been there." When by an innocent oversight we occasionally make an important omission or commission, if properly assimilated it will nourish more careful investigation and increase our usefulness in our profession. Never before have I even attempted to burden medical literature. I do so now purely in the interest of correct conclusions. Respectfully,

Fairbank, Iowa, Dec. 9, 1887. G. B. WARD, M.D.

ASSOCIATION ITEMS.

PERMANENT MEMBERS.—From the list of members of the Association published in THE JOURNAL for December 31, 1887, the names of A. E. Goodwin, M.D., Rockford, Ill., and H. N. Moyer, M.D., Chicago, Ill., were unintentionally omitted. In revising and copying so many names by the Secretary and Treasurer, there may have occurred other omissions; and if so, we will supply the defect by publishing all additional names to which our attention may be called.

MISCELLANEOUS.

PROFESSOR R. A. F. PENROSE, Professor of Obstetrics and Diseases of Women and Children in the University of Pennsylvania, has tendered his resignation to take effect at the close of the present college term.

SIR GEORGE BURROWS, of London, formerly physician to the St. Bartholomew's Hospital, and physician in ordinary to the Queen, died recently, aged 86 years.

NEW BOOKS RECEIVED.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the Fiscal Year 1887.

Health Lessons. A Primary Book by Jerome Walker, M.D. New York: D. Appleton & Co.

Report of the Surgeon-General of the Army to the Secretary of War for the Fiscal Year ending June 30, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM DECEMBER 24, 1887, TO DECEMBER 30, 1887.

Col. J. H. Baxter, Chief Medical Purveyor, ordered to inspect the medical purveying depot at St. Louis, Mo. S. O. 296, A. G. O., December 23, 1887.

First Lieut. Wm. B. Banister, Asst. Surgeon, ordered to proceed to Ft. Lowell, Ariz., and report to commanding officer for duty, upon the arrival of Surgeon P. J. A. Cleary, at Ft. Wingate, N. M. S. O. 135, Dept. Ariz-, December 20, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING DECEMBER 31, 1887.

P. A. Surgeon C. Biddle, detached from the Marine Rendezvous, Philadelphia, and placed on waiting orders.

Medical Director C. J. Cleborne, detached as member of Medical Examining Board December 31, and ordered to Norfolk Naval Hospital. January 5, 1888.

Medical Inspector M. Bradley, detached from Naval Hospital, Norfolk, January 5, 1888, and placed on waiting orders.

Medical Inspector J. H. Clark, detached from special duty at Portsmouth, N. H., and ordered as member of Examining Board at Washington.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING DECEMBER 30, 1887.

P. A. Surgeon A. D. Bevan, resignation accepted, to take effect January 31, 1888, and leave of absence extended to that date. December 31, 1887.

Asst. Surgeon W. D. Bratton, granted leave of absence for thirty days. December 30, 1887.